

OK (APP)

THE
AMERICAN
JOURNAL OF INSANITY.

EDITED BY THE
MEDICAL OFFICERS OF THE NEW YORK STATE
LUNATIC ASYLUM.

VOL. XXVIII.

The care of the human mind is the most noble branch of medicine.—GROTIUS.



STATE LUNATIC ASYLUM.
UTICA, NEW YORK.
1871-72.

ROBERTS, PRINTER,
HERALD OFFICE, UTICA.



11
10
9
8
7
6
5
4
3
2
1

INDEX TO VOL. XXVIII.

	PAGE.
Act of Legislature to Provide for Safe Custody and Care of Insane Criminals, &c.,	121
Act of Legislature to Authorize Judicial Inquiry as to Sanity of Persons Indicted for Capital Offences,	122
Act of Legislature in Relation to Chronic Pauper Insane,	346
Act of Legislature to Provide for Taking Testimony, &c.,	461
Action of Neurotic Medicines in Insanity,	114
Anæsthesia, Hospitalism, Hermaphroditism, &c., Review of,	589
Andrews, J. B., M. D., Chloral,	35
Animal and Vegetable Parasites, &c., Notice of,	589
Anniversary Address before the Medical Society of the State of New York, ...	1
Appointment of Dr. A. Marvin Shew,	347
Appointment of Dr. A. O. Kellogg,	461
Appointment of Dr. J. B. Andrews,	461
Appointment of Dr. Walter Kempster,	461
Appointment of Dr. D. H. Kitchen,	461
Association of Medical Superintendents, Proceedings of,	201
Bacon G. Mackenzie, General Paralysis,	343
Case of Pierce.—Plea, Insanity, by S. T. Clarke, A. M., M. D.,	399
Chloral, Physiological Action and Therapeutic Use of, by J. B. Andrews, M. D.,	35
Chronic Pauper Insane, Act of Legislature in Relation to,	346
Demonomania and Witchcraft, by J. Workman, M. D.,	175
Death of Dr. E. G. Marshall, Notice of,	597
English Psychological Literature,	530
Epilepsy,	119
Evolution, Theories of, No. I.,	125
Evolution, Theories of, No. II.,	349
Examination, Ophthalmoscopic, of Insane,	410
Foreign Reports,	112, 449, 568
Handbook of Skin Diseases, Review of,	456
Hun, E. R., Dr., Labio-Glosso-Laryngeal Paralysis,	194

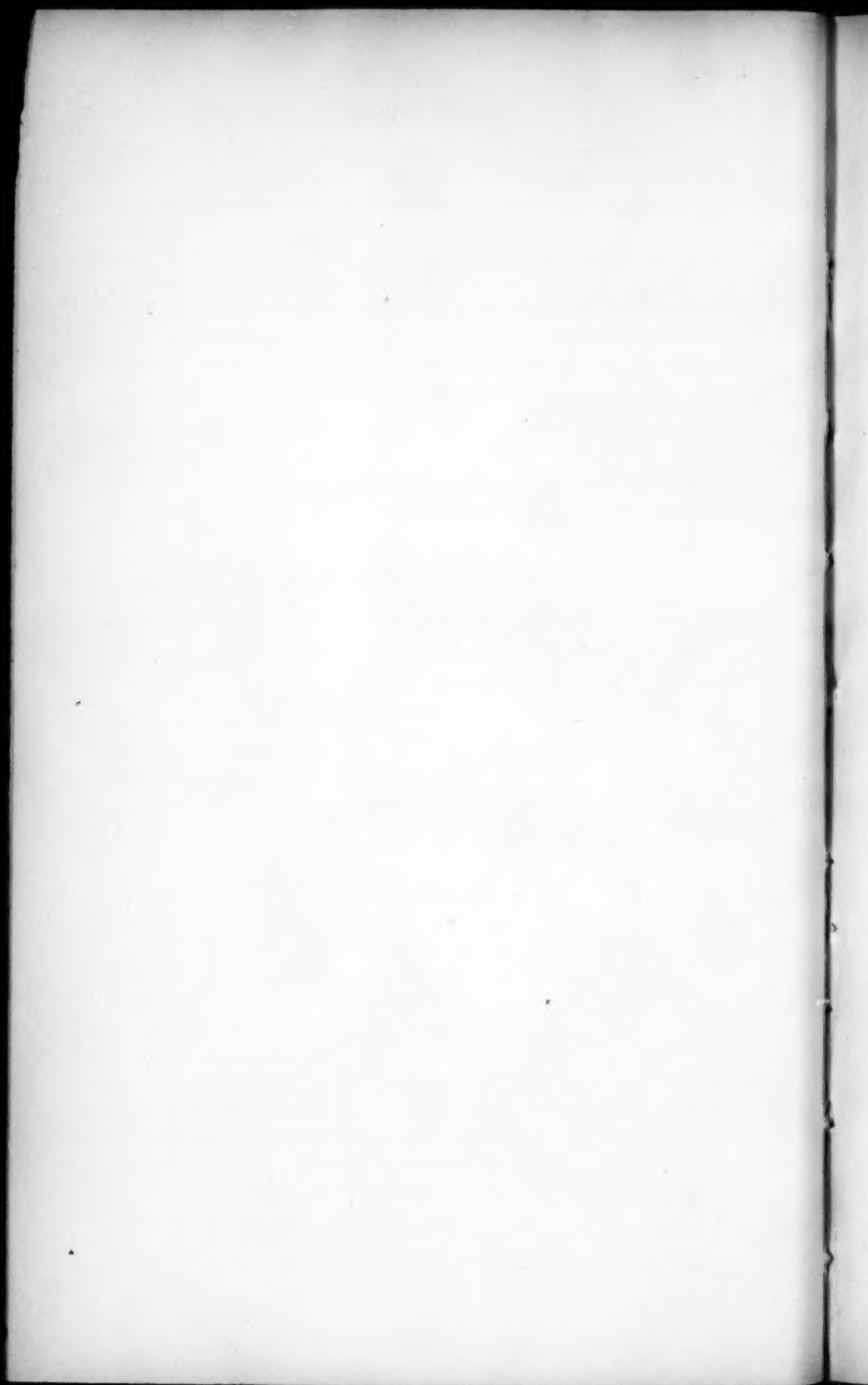
MS. B. 1. 2. 9. 10. 2. 11.

Insane, Provision for, by Dr. E. H. Van Deusen,	514
Insanity in Relation to Law, by Henry Landor, M. D.,	56
Insanity and Its Treatment, Lectures on, by G. Fielding Blandford, M. D., Oxon, Review of,	77
Insanity, Plea of, Case of Pierce,	399
Insanity and Insane Asylums, by Dr. Wilkins, Review of,	574
Labio-Glosso-Laryngeal Paralysis, by E. R. Hun, M. D.,	194
Life Insurance and Insanity—Judicial Decision,	594
Marshall, Dr. E. G., Death of,	597
Medical Superintendents, Association of, Proceedings of,	201
Meeting of Association of Medical Superintendents, Notice of,	598
Meningitis, Simple Acute,	120
Neuralgia and Diseases that resemble It, Review of,	454
Nosological Position of General Paralysis,	343
Noyes, Henry D., M. D., Ophthalmoscopic Examination of Insane,	410
Pamphlets Received,	113, 459
Paralysis Labio-Glosso-Laryngeal,	194
Paralysis, General Nosological Position of,	343
Parigot, Dr. J., Notice of Return,	347
Pathological Anatomy, by S. O. Vanderpoel, A. M., M. D.,	1
Physiological Action and Therapeutic Use of Chloral,	35
Physiological Effects of Severe and protracted Muscular Exercise, Review of, ..	454
Plain Talk About Insanity, Review of,	587
Proceedings Association for Cure of Inebriates,	573
Proceedings Association Medical Superintendents,	201
Provision for Insane, E. H. Van Deusen, M. D.,	514
Psychological Retrospect, English,	530
Report of Ten American Hospitals for the Insane for 1870,	94
Report of New York Asylum for Idiots, 1870,	105
Report of Massachusetts School for Idiotic and Feeble Minded Youth, 1870, ..	105
Report of the New York State Inebriate Asylum, 1870,	106
Report of Board of State Charities of Massachusetts, 1870,	107
Report of Commissioners Public Charities State of New York, 1869,	111
Report of Board of Public Charities State of North Carolina, 1870,	112
Report of Sixteen American Hospitals for the Insane, 1871,	433
Review of Handbook of Skin Diseases,	456
Report of Twenty-four American Hospitals for the Insane, 1871,	546
Reports and Pamphlets Received,	590

INDEX.

v

Report of Commissioners of Public Charities State of Illinois, 1870,.....	580
Report of Wisconsin State Board of Charities &c., 1871,.....	572
Report of Commissioners of Public Charities of the State of New York, 1870,	570
Report of Dr. E. T. Wilkins, Insanity and Insane Asylums,.....	574
Ruloff, Edward H., by Prof. Geo. C. Sawyer,.....	463
Subcutaneous injection of Morphia in Mental Diseases,.....	117
Simple Acute Meningitis,.....	120
State Inebriate Asylum—Election of Officers,.....	123
Theories of Evolution No. I.,.....	125
Theories of Evolution No. II.,.....	349
Transactions of State Medical Society, Michigan,.....	457
Transactions of State Medical Society, Indiana,.....	458
Van Deusen, E. H., M. D., Provision for Insane,.....	514
Vanderpoel, S. O., A. M., M. D., on Pathological Anatomy,.....	1
Wey, William C., Dr., Remarks of, Review of,.....	573
Wilkins, E. T., Dr., Insanity and Insane Asylums,.....	574
Workman, J., M. D., Demonomania and Witchcraft,.....	175



AMERICAN
JOURNAL OF INSANITY,
FOR JULY, 1871.

PATHOLOGICAL ANATOMY.

Anniversary Address delivered before "The Medical Society of the State of New York," at its Sixty-sixth Annual Meeting, by
S. OAKLEY VANDERPOEL, A. M., M. D., President of the Society.

GENTLEMEN OF THE SOCIETY:

In addressing you this evening, I make no apology for stepping somewhat aside from the beaten track, in the selection of my theme. From the fact that the audience is not wholly composed of medical men, it has been customary to select a subject somewhat popular in its character and general in its application. I confess, however, that neither my reading, nor tastes fit me for such an effort, and I shall rather ask your attention to a subject bearing in an intimate manner upon our everyday duties; influencing, in just so much as it is carefully studied, our train of professional thought, and consequently our action with reference to the character and treatment of disease. Not that I shall be indifferent to the interest, and even attention of those whose studies are not strictly such as pertain to medicine; for in all the natural sciences there is a close bond of union, an intermingling of sympathies in thought, which renders any arbitrary line of demarcation impossible; and though I speak to night of a theme, at first mention

wholly unattractive, perhaps repulsive, to all save those whose interest has been instructed, still it will be found to involve practical considerations, and demand the aid of scientific formulæ as intricate perhaps as any other branch of physical science.

Your attention then is invited to considerations upon the necessity of the culture of Pathological Anatomy; its relations to the daily workings of the physician; the influence its cultivation has exercised upon the progress of medicine, and how far its present knowledge advances our appreciation of the intimate workings of disease in the economy.

I am led to this topic from the fact that the general profession are far too indifferent to its *practical* study. Content to receive the *ipse dixit* of general text-books, or special treatises upon particular organs, or recalling the necessarily imperfect demonstrations made during the students' curriculum, they pass through life indifferent to, or unmindful of, the rich stores of practical information constantly thrown within their reach. Ever studying disease patiently and assiduously during its active processes, they stop short of verifying the third, and most important, element of the syllogism, the *proof* of the correctness of their labors.

Shall I speak what I know to be true, that there are scores of able, laborious physicians; men whose acute perception, careful observation, and intimate knowledge of disease entitle them to worthy confidence; who yet pass their lives in this almost empiric course, rarely witnessing or making a post mortem for the purpose of verifying a diagnosis, and roused only from this indifference when some startling occasion calls for the verification of doubts and suppositions?

Daily will they listen to the taunts of the want of positivism in medicine as a science; daily will the un-

certainties of their own practice evoke the self-reproaches of conscience; and yet the golden opportunities of solving a doubt, confirming a fear, or establishing a truth pass indifferently from their grasp. If each did but labor for himself in this field, if nature were but systematically and carefully interpreted, too many a boasted diagnosis would prove fallacious, and many hidden ailments be revealed, which imperfect examination, or blind prejudice in preconceived ideas, had clouded from the mental vision. These things are said in no uncharitable spirit. For while recognizing what are conceived to be the deficiencies of the profession at large in this respect, I am by no means unmindful of the obstacles and difficulties which *apparently* surround the practical workings of this branch of study. I say apparent, for I so conceive them chiefly to be, and that the earnest spirit, the faithful interpreter, can dissipate them all, and in the end really be aided by what at first seemed his chief hindrances.

In the larger centres of population, the stimulus arising from the contact of inquiring minds has of late years given a vast impetus to the study of pathological anatomy. Special organizations are created for this purpose, and the interchange of observations, the exhibition of specimens add to the general fund of knowledge. The facilities, too, of gaining autopsies are far greater than in sparsely settled districts. Indeed, I know the remark now rises instinctively to the lips of every physician engaged in country practice, that he has neither the *time* nor the *opportunity* to pursue this study.

I know full well the difficulties and prejudices which surround him, since earliest memories recall the fatigues, anxieties, and wearisome journeyings which are the heritage of the country doctor. Though years have

ped, the untiring labors of a venerated *father*, who for over thirty years responded to every call of sickness and distress, is, though softened, still vivid to the recollection. Our boyhood was initiated into the mysteries of compounding drugs, of venesection, and dentistry; and our introduction to professional labor, with the exhilaration and beauties of a country life, realized also the long pilgrimages by night, the buffetings with winds and storms, the slow progress through the deepening mud or drifted snow.

I too have sat by the bright blaze of the large old fire-place, and listened with childish wonder to the simple legends, mingled with much of superstition and awe, which pass from the old to the young, and know the dread and innate antipathy existing towards everything which seems to desecrate the remains of the dead. And yet with the difficulties arising from exhausting labor on the one hand and superstition on the other, we contend the country practitioner allows to pass too easily from his grasp the opportunities for pathological research. The rich fields which present themselves to his experience lie too often ungarnered and neglected. Fatigue should be forgotten in the zest for research, and prejudice overcome in the earnest claim that death, to the true student in his profession, but opens the portals to those mysterious labyrinths where disease with its protean workings is ever weaving deadly meshes, but where too, by reflected light, he may learn either how calamity may be averted, or at least, procrastinated to the future.

Indifference manifested by the physician to the study of pathological anatomy operates most unfavorably upon the young men commencing the study of medicine. Much as is said of natural gifts and predilections, I am of those who firmly believe most of our

tastes and habits are *acquired*. Very few, I think, pursue the study of any department of natural science from mere intuitive impulse, but rather as the result of some direct attention to the special subject, by which the curiosity, or it may be the thirst for further knowledge is stimulated. Subjects which at first sight are repugnant, may if properly approached, and the zeal awakened, become of special and absorbing interest. This is in a peculiar manner true of morbid anatomy. There is in the experience of every beginner in medicine an instinctive repugnance, which meets him at the very threshold of his pathological studies. From early childhood he is taught to consider death, and the ever recurring mystery which the transition occasions, with awe. He looks at the body only in its decomposing elements; he feels that the necessary dissections are a violation of respect to the memory of the dead. Added to this is the natural disinclination to handle rapidly decomposing substances, or those from which arise fœtid emanations; he has too the healthy fear impressed upon him to avoid the sœptic poisoning which arises from the absorption of decomposing fluids: and yet it is at this early stage of his studies that the taste for researches of this kind must be acquired, and the habits of exactitude and minute research established. Indeed, if the preceptor is to give special prominence to one branch of medical study rather than another, it should be that of pathological anatomy. In anatomy and physiology his admiration is ever active at the wonderful mechanism and harmony of parts, the ceaseless activity of function, the vital unity which pervades the whole. And even in sickness when function or harmony is interrupted, his attention is readily occupied by the restoring agencies which the skill of the physician applies. In pathological anatomy, however, he has none of these stimuli.

Like the study of the classics in the youthful curriculum, it is approached with a feeling of dread: like them, the subsequent love of their study is an acquired taste; and like too the classics, in being the foundation of solid and thorough education and discipline, so pathological anatomy, in the personal study of each physician, must be the basis from which to explain the morbid phenomena each day's experience presents. I throw then, primarily, the responsibility of acquiring the taste and knowledge of pathological anatomy upon the preceptor.

The great majority of young men commence the study of medicine away from the centres of medical education. A primary discipline, thus acquired, need not be and is not time necessarily lost. The student acquires habits of patient toil and study; of self-reliance and personal observation. Even in the quiet walks of his country home he may from time to time have opportunities of practical demonstration, far superior to those which can be offered in any medical school.

I claim then that the study of pathological anatomy should begin with the commencement of the student's medical course. Even though he is not familiar with the normal appearance and condition of organs and tissues, still the two are always found in juxtaposition; for rarely is a whole organ or tissue diseased; and he insensibly acquires that first education of the senses of sight and touch, far more valuable and enduring than the most minute and elaborate description. What would be thought of one commencing the occupation of machinist, who contented himself with reading and studying all that pertained to the theoretical ideas of motion and force, and yet never made himself practically acquainted with the construction of a machine, or the repair of one which was disabled? And yet we

ask our young men to commence the study of the workings of the most delicate of all machinery, its harmonies and irregularities, without the slightest practical experience of how the different parts look or feel, or are related the one to the other. Would you delay this study until the student attends the lectures of some medical school? I answer, such delay is most unfortunate. With the best acknowledged facilities for its study, pathological anatomy can be but imperfectly imparted. How little definite impression is left upon the mind, when to a class of from one to four hundred a pathological specimen is presented, and it may be, carefully described, yet how few are sufficiently near to profit materially? No! Pathological anatomy, like normal, must be studied individually in the quiet of comparative retirement; and the student must make himself practically familiar by sight, by touch, by microscopic research, with the metamorphosis of tissue or the destruction of organs. Rather the study of pathological anatomy at the medical school than none at all; but better far its study under the personal supervision of the instructor.

At this point it may be claimed my position is defective, for there should be a more definite expression as to what is considered the province and limit of this branch of study. Briefly then, pathological anatomy takes cognizance of all alterations in the economy, whether they are the cause or effect of disease. It should tell us which are the elements in organs, that are attacked, what transformations of form, volume, consistence, or composition they undergo. Even here its province does not cease. By comparing a large number of similar lesions of different degrees, we have presented the complete cycle of morbid transformations, in taking each organ in a condition of health and fol-

lowing out all the alterations of which it is susceptible, even to the extreme phase, and then the return to a normal state if such return be possible; at the same time it should indicate what changes are permanent after the cure.

Under this aspect pathological anatomy is allied to pathological physiology by the same relations that anatomy is to physiology. As anatomy studies the different parts of the body in a state of repose, and physiology the action of organs, so does pathological anatomy study the cadaver or the resultant of disease, and pathological physiology the manner in which the diseased portions performed their functions: or in other words shows us how the lesions are allied to each other and how they trouble the normal functions of organs.

With a province and duty so broad, it would seem that the necessity for its cultivation would be universally recognized. Yet there always have been and still are ardent adversaries: minds which cannot bind themselves to study realities, which cannot permit facts to present any obstacles to their speculative abstractions. As ultra vitalists, they see nothing but morbid function, and take no cognizance of the suffering organ; or again they seek to depreciate it, in alleging that it establishes only effects or results of disease. While this is often true, yet have not these very effects their importance? And from these lesions carefully studied in their different states, may we not deduce the successive phases of the malady? Sometimes, indeed, determine the origin and nature? And does it not become often possible so to explain the symptoms, and draw from them practical deductions for diagnosis and treatment? Yes: it is not too much to affirm, that a half century of studies in pathological anatomy has made greater progress in medicine, than ten, fifteen centuries of spec-

ulation upon the nature of diseases, considered at one time as atonic, and at another as excess of action. I affirm that without its study there is no possible verification of opinion, no means of rectifying one which is erroneous. It constitutes the surest foundation of experience, in confirming the physician in his appreciations, if they are justified; or in correcting, if the results show him in the wrong. To-day, the most obscure affections are those in which the anatomical lesions are least known, or even completely ignored.

Without the aid of morbid anatomy joined to clinical observation, what would be our diagnosis of a great number of diseases? Percussion and auscultation would not be recognized, or at least the phenomena, obtained by these important aids of diagnosis, would be only doubtful signs; the same as oppression, pain, cough, &c. The simple recital of some of the principal lesions, the history of which has thus been established, may not be profitless. How, without it, could simple bronchitis be distinguished from tubercular? It teaches to recognize cancer from chronic ulcer of the stomach, having, as they do, many analogies in symptoms, the one of which is however, often curable, and the other always mortal. It teaches, also, how tubercles are curable in their first period, and in their ulterior phases. In revealing the alterations of the kidney in Bright's disease, pathological anatomy has lighted up the causes of several forms of general dropsies, and conducted to more rational therapeutics. The knowledge of venous obstructions explains the mechanism of local dropsies. The discovery of blood-clots in the cavities of the heart reveals the cause of certain sudden deaths. Arterial emboli often explain local gangrene, as also venous emboli and thrombi in the pulmonary vessels, give the key to those sudden oppressions, often mortal, and until this discovery, not understood.

Great as are the benefits it daily renders to the *science* of medicine, they are equally so to the *practice* of the art, constituting one of its most precious resources. A certain malady may, to the vitalist, seem only an enteralgia with trouble of assimilation; but the practitioner who seeks to penetrate the cause, will recognize by the rectal touch, cancer of the intestine. Another, following the Hippocratic course, will diagnose a nervous dyspnea, while the anatomo-pathologist readily discovers pleuritic effusion. Indeed, what are all our aids of examination, such as the ophthalmoscope, laryngoscope, endoscope, but the study of pathological anatomy upon the living organism?

Again, how often do we suppose our remedies cured a patient, when some accident has demonstrated we were entirely wrong? The individual has perhaps died suddenly from some other cause, and on examination the effect we have attributed to our treatment has evidently resulted from natural causes. Or how frequently has it been shown that mere symptoms are deceptive, and that a supposed inflammation is in truth no inflammation at all? Investigations carried out in this manner, with a true spirit, will lead us to criticize carefully our remedies; not, as some assert, induce timidity, but rather show the fallacy of violent measures to cut short or suppress disease, when its positive detection is liable to so many fallacies.

Still, we cannot fail to recognize that pathological anatomy, considered either as a base of scientific investigation, or as a resource in the practical application of the art of medicine, has its limits, and we should not demand of it what it cannot render. We cannot say there is lesion, whenever there is sickness, or suffering, or functional trouble; or that each morbid symptom has for its correlation an anatomical alteration. The

material cause of a functional trouble, may, as in the case of impure air, be wholly without the organism. Restore pure air, and the disease is cured.

It often happens, too, that when the most palpable material lesions are established, they do not reveal what may be really desirable to know of the disease; and though they may explain certain functional troubles observed during life, at other times we are left in uncertainty, or have at best but imperfect notions of the different acts in the pathological drama. Or, again, the lesion we find, may be, as in the ulceration of typhoid fever, but an effect of the disease. But has not this resultant of a morbid act in the organism any practical value? Neglecting an effect, we may have the awakening of a new trouble, in perforation of the intestine. Sometimes the organic trouble ceases, while the lesion, the effect of such trouble, remains. Yet it is none the less a disease. Fibroid tumors of the uterus are the morbid products of a physiological act which ceases at middle age. While the fibroid growth may not therefore increase, still, it is a foreign body, having its importance in the future working of the economy. A calculus forms in the bladder, as a result of an alteration in the constituent properties of the urine. The urine may become normal, still the calculus remains, and becomes thus the essential cause of disease.

Still there are morbid states and pathological acts, of which corresponding organic modifications are inappreciable. Pathological anatomy cannot inform us what constitutes the herpetic, rheumatic or gouty diathesis; nor can it tell us by what mechanism or physical act, the fluxion which exists to-day in the knee, shall disappear, to re-appear to-morrow with the same characters in the shoulder or elbow. These and many other instances which might be multiplied, show us that there

are living forces in the economy which escape the appreciation of the pathological anatomist. We are forced to admit the influence of the vital principle, with its intellectual and moral manifestations. This is not of the domain of physical science, but our researches must always reach this impassable limit. In the condition of disease as in that of health, there are troubles of the living economy of which the natural sciences can give no explanation.

But granting the vital principle, with its modifications from moral and mental conditions, and also troubles from functional causes independent of anatomical lesions, shall we not therefore study where such lesions are incontestable? Besides, who shall say that in a number of diseases, where anatomical researches have not to this time established a lesion, we shall not yet find intimate modifications of structure, which may, owing to our imperfect methods of study, have thus far escaped our observation? It is only necessary to mention in this connection the train of affections of the nervous system, which remain obscure in their changes and results, from the want of proper means of study of this most delicate of all the structures.

Thus far the considerations adduced, have related to the necessity of the culture of pathological anatomy, and the addition it contributes to the sum of positive knowledge in the daily experiences of the physician. There is, however, in its historical aspect a broader field of view, wherein the changes it has wrought, and the influence it has exercised upon the other departments of medicine can be better appreciated. From a mere personal standpoint, one cannot comprehend the results it has accomplished, nor realize the vast progress its study has given towards placing medicine in the rank of a science. We who enjoy the benefits arising from

its study, who receive as axioms the truths it has established, knowing of them no doubt nor wavering, cannot without this survey, realize the uncertainty and chaos which till its study hung over the medical world.

As in history, he who attempts to write of current events, or in biography of immediate actors, fails in the former to appreciate their true philosophy, or in the latter to realize the harmonious workings of character, from too immediate contact with such events and characters; magnifying the one with undue importance, or belittling some trait which is allied to the inner springs of character: or again, as the dweller on the plain, knows not the grandeur and extent of the landscape, familiar to those upon the lofty height, being wholly absorbed with immediate objects; so must we in order to appreciate the scope and influence of pathological anatomy upon the progress of medicine, cast aside immediate impressions, and seek that time when medicine groped without its teachings, and when the ingenuity of speculation, replaced the toil of observation. Fortunately the dividing line is marked and decided. Pathological anatomy is the *younger* sister in the department of medicine. Scarce a century has elapsed since its claims were definitely established, and we could appropriately recognize on this occasion, the centennial of the death of its great founder. Not that medicine as a science did not exist before the study of pathological anatomy, since we presuppose its existence by establishing the influence which it has exercised. Theoretically speaking, we can scarcely conceive, that the science could have been so called when it ignored the laws of organic development, vices of conformation, the reproduction of injured parts, the formation of tissues, analogous and heterologous to the natural, the existence of lacteal and lymphatic vessels, the mechanism of the

circulation, respiration, secretions, &c. Yet historically this is true. Without pathological anatomy, and even before its study, medicine existed and showed remarkable results. Its scientific relations, however, were wholly occupied with diseases in their external appearance, in the study of their physiognomy. It was the period of direct, visible observation, when the tableaux of symptoms shone in all their brightness; a brightness without penetration, which would substitute the glare and glitter of the surface for hidden wealth, unsought and so unrevealed. The advent of a new period was announced by the study of the concealed or internal phenomena of disease. Such progress, however, does not prove the inutility of pathological anatomy, but rather that our science is not a dogma; that it was not born, grown and developed in a day; that, too, like the organic being, the phases of which it studies, it admits of evolutions in its growth, even though the lapse be centuries. Still a review of the progress of medicine up to the middle of the last century, strikes us painfully to see what obstacles routine, prejudice, and especially the pride of *systems* oppose; here it may be by inertia, there by active violence, the establishment of correct principles. Physiology scarcely makes a conquest, ere it is turned into ridicule to be forgotten, or used it may be to serve as a rallying point around which to concentrate all pathology, without inquiring whether previous discoveries did not contradict the hastily drawn conclusions, or thinking if one point is illuminated, many others must still remain in obscurity. Thus at one time chemistry was invoked to explain all; at another mechanism, or possibly vitalism. Or again it was irritability, or it may be stimulation, and even at a comparatively recent period, through Broussais, the dogma of irritation. It was only when the pure and

solid experimental method, which seeking after truth, did not hasten to enunciate laws, but was content to record facts, drawing later from them established principles, was accepted as the basis of scientific research, that pathological anatomy took its inception. This change was by no means instantaneous. The mind like the body requires cycles for its evolution, and the germs of a principle are traced far back of its full development. In reviewing then, the philosophical spirit of the earlier and middle parts of the last century we find it markedly skeptical and materialistic; elements, both of which are absolutely essential for scientific growth. The human mind was heartily sick of the vague and profitless speculation upon generalities. Though, through the labors of Morgagni, this branch of study took at one step its scientific relations, still the student can see a slow, but sure shaping for this method of study. Bacon and Descartes, each in their respective spheres had revolutionized the world of thought. The former taking for guide in the study of natural science, *observation, experimentation, and induction*, traced the method which assured immense progress to the natural sciences, conducting Harvey, Galvani and Newton to their splendid discoveries: while the latter, in the domain of philosophy and abstract science, no less effectually broke the shackles which the force of ages had riveted on the mind, by admitting nothing except what was demonstrated by *reason* and *experience*.

To Morgagni, of Italy, then, belongs the credit, but little more than a century since, of laying the foundation of scientific pathological anatomy. While in the writings of his immediate predecessors and teachers, Malpighii, Albertini, and Valsalva, we notice the glimmerings of the truth soon to be established by him, yet

he it was, who by patient toil demonstrated the clinical relations of disease with their precise appearances after death. His life is a remarkable example of brilliant genius and untiring perseverance which ripened in the wisdom of maturity. What a lesson to the sunshine workers of our profession!

While yet a youth he excites the admiration of the illustrious savans who were his teachers. A doctor in medicine and philosophy at nineteen, he became prosecutor to Valsalva, and filled the chair during the absence of his principal. When twenty-four years of age, he published his work, "*Adversaria Anatomica*," and so placed himself in the front rank among anatomists. Far from being elated with his precocious success, he did not cease to instruct himself. Though occupied ardently with comparative anatomy and chemistry, he did not in the mean time neglect the practice of medicine. When too, we consider the enormous amount of material disposed of by Morgagni, we cannot but admire the wisdom he showed in burying those treasures during all his long career, in order not to give them to the public until he arrived at an advanced age, being almost an octogenarian. His immortal work written in the latter part of his life, "*On the Seat and Causes of Diseases*," is based upon the examination of more than six hundred cadaver; a number, considerable at all times, enormous for the epoch in which he lived. He joined to his own materials those which had been communicated to him by Valsalva, and those that he found in his manuscripts. But all the documents the works of his predecessors furnished, and even those of his master, lose in their importance, and disappear, before the extent of his own researches. For the first time is seen a man grave and severe, separating himself from the anatomo-pathologists of the times, who were always

seeking for the *wonderful*, and occupying himself with the most elementary questions. His anatomical descriptions are made with an exactitude unknown up to his time. As often as the documents he possesses permits, he confronts the symptoms observed during life with the results of post mortem examinations. He avoided, as far as possible, generalities, and confined himself to the recital of facts. And may we not wonder that the founder of scientific pathological anatomy did so much with so great impartiality. No higher compliment can be paid to his memory, than the words of Cruveilhier, applying to him the cognomen of his great cotemporary, "Haller of pathological anatomy."

It is not proposed in the limits of a discourse, to recite the progress made in the study of pathological anatomy from Morgagni onward. Yet historically it has a great interest. How its study, passing from Italy beyond the Alps, found a ready acceptance in the medical mind from the experimental bias at the time given by Haller to physiological studies. Holland, then as celebrated for her scholars, as she had been for the nurture and the growth of the principles of civil and religious liberty, cherished the infancy of the science during the stormy days of the French revolution, and the early wars of Napoleon. And when at length, after a series of wars running through a whole generation, France, though humbled, yet masculine from the hardihood of her efforts, again sought in the pursuits of peace an emulation for scientific studies, and employment for her genius, we find coming forth that wonderful school of pathologists, whose labors and writings have been the admiration and study of most of those before me; very household gods to the plodding worker in this field of research. The names of Desault, Bichat, Corvisart, Dupuytren, Cruveilhier, Andral, Louis, &c., occur at

once as examples of this untiring and persevering school. England, though later in the field, was not in different to the impulse, and her literature shows many noble proofs of pains-taking and careful research.

While, however, it may not be permitted to follow out, step by step, the progress made in pathological researches, still, it is appropriate to study the influence which its active cultivation exercised upon the science of medicine, and also the impress, still distinct, with which previous systems in turn biased the direction and character of investigations.

The cultivation of pathological anatomy represents, in the history of medicine, its logical development as a science. Though its rise was, as we have said, by no means sudden and unpremeditated, but due to the spirit of experimentation which arose in the sixteenth century, still up to this period, observation was confined almost wholly to external phenomena, visible to the eye. Pathological anatomy opened the study of inner parts, and was thus enabled to give the brilliant symptomatology of Hippocrates a scientific basis, which the dogmatism and empiricism arising from partial systems had failed to contribute. Indeed, looking to the past with the light now afforded, it was these premature efforts to construct systems, which for so many centuries kept medicine debased in its scientific relations. If the reserve of Hippocrates had not been discarded by his successors; if for the rational and experimental basis upon which he fixed the art of medicine, they had not substituted the premature attempts of a scientific organization, then impracticable, perhaps the destinies of medicine, better favored, would have been spared the immense detour, and the long parenthesis of twenty-two centuries before reaching Morgagni; floating, without cessation, during this long interval between in-

complete and fallacious observation ; between the Hippocratic doctrine, continued by tradition but obscured by systems, good perhaps, but insufficient, and the attempts at scientific organization even worse, because of their arbitrary character. To the premature efforts at systemization, the most brilliant and useful discoveries were nugatory and profitless, since they failed to conform to the reigning hypothesis.

While the study of pathological anatomy contributed much to the position of medicine as a science, its influence was no less marked in giving renewed impulse, and harmonizing previous labors in the different departments of medicine. Acting as a central study, around which grouped, irresistibly, facts from other departments, it served as a rallying point for observers. Previously each arm of medical science, isolated in its speciality, had, for others, only distant relations. Anatomy, for example, had scarcely any alliance with pathology and therapeutics. Physiology was, so to speak, a stranger to the other two. While they might be called pieces of a grand whole, their relation was that of juxtaposition rather than combination.

Not less evident also was its effect upon the natural sciences ; for as soon as some of the laws of abnormal development were discovered, it was recognized that these should be studied in the immense sphere of their activity. Such study alone, by an elevated generalization, could start from the quiet contemplation of phenomena, and extend the application to the utmost limit of creation, in discovering the laws which preside in all vital irregularities. This generalization of principles brought in closer alliance the different branches of science ; and these, in turn, acquiring extent by researches, and unity by analogy, became animated by a new philosophic spirit. There seemed to have been something

which acted as a germ to this common fusion and fruitful renovation. That germ was that it compelled the examination of nature herself for supposed facts; and we find the literature of the period, when these researches were the most active, almost exclusively occupied by such discoveries. Few works were published but were inspired by such researches, and few authors but were compelled to discuss and analyze them. Pathological anatomy became thus another link in the fusion of the sciences; and if on the one hand it harmonized medical observations, it was at the same time the common union of all biological studies.

So too, was its influence happy in harmonizing and establishing many isolated truths of the ancients: truths which long observation and experience had established, but which lacking a common bond of unity, had floated with the caprices of dominant systems, and lost to a great degree their significance and their force. Organic studies then, by establishing an alliance between tradition and new discoveries, and making of modern medicine a science, which disregarded nothing in its past annals, which sought truth through all systems, but which, progressive since it had experimentation for guide, served as an active principle to renew quietly all parts, without at the same time disturbing the unity; differing widely in this respect from all past systems, which from exclusive immobility could neither allow addition nor subtraction.

Another result emanating from organic studies, was that it enlarged and is enlarging the field of experimentation. Previous to their cultivation this method of investigation had been confined almost wholly to the verification of normal acts in the economy. The first impulse was to increase studies of this nature, but we soon find the disposition apparent to imitate artificially

phenomena, of which physiological acts gave no explanation. Art attempted to a certain point to group all the conditions and circumstances requisite to study a given fact; for to wait upon the manifestations of nature alone, would ill satisfy the impatience of eager investigation. Nature rarely arranges them in an order suited to the necessities of our mental capacities, and though she follows in her works a regular and determinate march, this path is oftentimes followed so slowly, and by so many circuits, that the observer does not seize the relations of phenomena so distant from each other; or it may be when the phenomena arrive without previous intimation to the observer, he is taken unawares, or ill prepared for their examination; though the intelligence is competent when he can govern such conditions. Experimentation then, to a great degree suggested by pathological anatomy, has since been most assiduously cultivated, and we find in all the large centres of medical instruction special facilities for its encouragement, and the dissemination of its teachings.

There is still another interesting feature connected with the development of pathological studies. However much it materially aided the scientific status of medicine, may have stimulated research in other departments, and enlarged the field of experimentation, it was itself fettered by traditions of the past, and must needs pass by turns, modified it is true by its own reflected light, through the different systems which had for so long a period governed medical thought. These systems, no matter what for the moment was the accepted belief, were always based upon the primary notions either of solidism, humoralism or vitalism. Nor was it strange that in organic studies it should follow a similar cycle. For the attention of anatomo-pathologists was first naturally directed to those alterations, surgi-

cal in character, because external, having reference to the changes of form, volume and relations of organs: when observation was directed internally, it was only to such lesions as were striking and extraordinary, as cancerous tumors, biliary or vesical calculi. Investigation was prompted to determine the *seat* of disease. *Solidism* was then the first fruit of the study of pathological anatomy, and marked the period of Morgagni in pathology, and Haller in physiology; the latter carrying the idea to the extent, that he expected to find the cause of organic formations in the solids of the embryo. It continued through the century to Laennec and Dupuytren, forming as they did a nosological classification upon this theory. Bichat, it is true made an advanced step, in studying not the diseased organs, but rather their component tissues; and while he and later writers recognize to a degree the importance of the liquids, still the study of alterations of the solids, was more or less the principal end of science. We can then safely assert that pathological anatomy at its commencement was wholly solidist.

Investigation could not long remain satisfied with such barren results. The *cause* of disease must also be determined and for this purpose the fluids as well as the solids were to be examined. Andral, in 1825, gave an undoubted impulse to this direction of study. His "*Clinique Médicale*" is a work of science and conscience, to which medicine is indebted for many new truths, and the revival of many forgotten precepts from classical antiquity. A few years later, another eminent pathologist wrote: "The more we study diseases, the more we attempt to determine their immediate seat, the more we are forced to regard the *liquids* as the vehicle of many morbid causes." The insufficiency of the solids, then led to the study of the liquids, as the

insufficiency of the *seat* led to the study of the *cause*. The march of every science is the same. There is a progressive law of doctrines, and morbid anatomy could only reach its position in pathology, by traversing the grand systematic ideas which had ever been upon the medical horizon. From humoralism, to complete the circle, the step was but short to *vitalism*. It was not, however, the vitalism of the ancients, which in its exclusiveness ignored all other causes; nor was it again the superstitious vitalism of Van-Helmont, or the theological of Stahl; but a renewed vitalism, founded on bases which recognized not only the attendants of solids and liquids, but also the modifications of *forces*; and which recognizing the analogies with the general forces of nature, proclaimed also their differences. It was not a vitalism depending upon external influences, but of the organism itself, interwoven with every organ and tissue. Vitalism, thus understood, was the legitimate expression of that period of the study of morbid anatomy when unaided vision and chemical analysis had exhausted research, and when vast orders of morbid phenomena must be ascribed to vital force. "It took cognizance of everything specific, peculiar, or proper to the living being; of everything which not being discovered by the sight, nor the touch, nor any external sense, is not directly observable. It consisted in the study and acquaintance of the acts and conditions of the forces which work in the individual sleeping or waking; which characterize his individuality in the thousand and one modifications of race, of constitution, of temperament, of idiosyncrasies; in the infinite variety of diseases, not less than in their periodicity, which it governs by a pre-established harmony."

In this connection it is interesting to notice by what a long and painful route anatomo-pathologists confirm

the aphorism of Hippocrates. "That we must consider in man, not only the solids and liquids, but especially the *active* powers, or that which gave them movement." Commencing then in solidism, organic science finished with vitalism, while Hippocrates, commencing in vitalism ended in the course of centuries by associating organic study, proving at once the failure of any individual theory, and the necessity of reciprocal influence.

For a period of forty years from the commencement of the present century, France maintained a pre-eminence for labors and researches in pathological anatomy, and the literature of the subject during that whole period can be consulted best among writers of that country. All that patient toil, clinical observation, and chemical analysis could demonstrate, was chiefly elucidated by them. Who that has read the classic productions of Bichat, Laennec, Andral and Cruveilhier, but will cheerfully acknowledge the debt of gratitude which the profession owe to their works of toil and genius? With them pathological anatomy completed its *first* era. Vast as were the accumulation of facts, philosophical and accurate as were their deductions, still we are forced to admit that the study presented little more claims for scientific recognition, than did that of astronomy when Galileo made use of the *telescope*; for in neither had the inner laws of force and motion been developed. Unaided vision had to this time wrought both in healthy and morbid tissue all that could be accomplished. It was reserved for another people to bring to the aid of investigation, mechanical appliances, and a philosophic spirit of research, which to-day makes histological pathology rank high in the pyramid of science. The German mind was wonderfully adapted to the class of labor which devolved upon it. The brilliancy and *éclat* of the subject, its precise clinical

relations and large generalizations, had been nearly exhausted by the French. Minute and patient toil must replace striking clinical demonstration. Order, method, analysis, must come forth from the chaotic mass which artificial aid brought to bear upon its study. In a word, another era was opening. Previous to the cultivation of pathological anatomy, the theories of the laboratory explained the seat and causes of diseases; subsequent to Morgagni, and up to the period to which we refer, clinical observation had completed her almost perfect work. For who shall describe with greater accuracy and fidelity than Andral and Cruveilhier? Who more methodically than Louis? How much advance upon the auscultation of Laennec, the percussion of Piorry, the cardiac murmurs of Bouilland? Bichat had carried the analysis of tissue as far as the eye and analogy would permit. Modifications of situation, of dimension, of weight, of form, of color, consistences, internal and external aspect, constituted under such conditions the limit of the study. Though such modifications are of extreme importance, yet they cannot reveal the profound microscopic and chemical alterations, comprised in the texture, structure, and composition of parts. Its study must again return to the laboratory; not however, as before, for profitless speculation, but to call the chemical and mechanical aids which would carry investigation to its last analysis.

Not that our immediate predecessors did not vividly feel the importance of such ultimate research. They accomplished with their means all in their power. Even when the microscope was introduced as a recognized aid to study, there were physicians blinded, it may be by prejudice, or bewildered by the immense number of new details introduced into the study of pathological anatomy, who declared that such researches

were almost wholly, if not entirely worthless. We blush to say that even at the present day, one may occasionally be heard to raise the voice of ridicule. And yet is it not closing one's eyes to the light? Is it not declaring one's self deliberately unjust or notoriously ignorant? Pathological histology has had and still has, the same as normal histology, its obscurities, its fluctuations, the necessity to retrace its steps. It is the history of every difficult science during its period of evolution. But who can deny that many questions in pathological anatomy have been definitively illuminated by the intervention of the microscope? Who can deny that this intervention has dissipated uncertainty upon many points, and contrary even to what was formerly its reproach, rendered more simple and easy the study of numerous lesions? Nor are they among the rarer forms, but those of daily occurrence.

The microscopic impulse spread with wonderful rapidity. Investigators were found on every hand, claiming through its use to penetrate the utmost mysteries of nature; enunciating generalizations and laws which subsequent researches showed to be untenable. The reaction which followed, threw, for a season, discredit on this class of researches. In this, however, the new era presented no exception to what experience and daily observation point us in the world of business as well as that of science. The establishment of any successful enterprize draws to its labors all restless, fitful workers, who, for a season, give a false glamour and obscure the real progress of the earnest worker. While the history of microscopic research is cotemporary and familiar to most of my auditors, still a concise review of its growth is necessary to the elaboration of the subject under discussion. The ardor for minute research was first noticed in the department of physiology, and the

names of Schultze, Purkinje, Valentin, Wagner and Muller should be especially mentioned for their histological labors at this period. In them, and particularly in the writings of Valentin, we find the first traces of cell doctrines, or the recognition of cells as the basis of all organic forms. He does not, however establish the *nucleus* as the fundamental expression. About 1838, Schleiden and Schwann were simultaneously engaged in studies, the former upon vegetable, the latter upon animal tissues. Schleiden first described in a clear and definite way the formation of cells in vegetable structure according to a single and uniform method. Schwann catching the *unity of plan*, applied it to animal tissues, and by the adoption of the *nucleated cell* as the elementary form, gave an individuality and vitality to the anatomical details then collected. He caught the first glimpses of a truth, which, although it then needed verification, was soon to be recognized as the grandest in physiological science. Though this truth was speedily verified and accepted in the physiological world, and histology built upon it the sure foundations of a science, pathologists were comparatively slow in grouping about this genesis, the many and varied formations and fluids which constantly claimed their attention. Yet it seems self-evident that the growth of normal histology, and its relations to physiology, involved, as a necessary sequence, the same relations of pathological histology to pathological anatomy. This sequence now so natural, required years to effect. The first efforts in pathological histology were directed to the study of certain secretions or exudations, and while for nearly fifteen years great industry and perseverance were shown, and many isolated facts collected, there was no central idea to guide or direct observation. It was still the principle of Bichat with reference to anatomy,

studying disease by tissues, only carrying investigation far more minute by the use of microscopic and chemical aids. The writings of Gluge, Hasse, Vogel, Wedl, though constantly mentioning the presence of the cell in the composition of morbid humors and tissues, fail to recognize the unity of plan which had found full acceptance in physiology. Even the grand and almost incomparable work of Rokitausky, which, for faithful description and a generalization based upon the largest experience, must ever make it classic, enters but little into the minute structure of tissue, or the unity of the great law soon to absorb the pathological mind.

We cannot of course in our restricted limits trace the collateral workings of this idea. While distinguished names are noticeable in England and France; in the former Bennett, Paget, Todd and Bowman, in the latter Donné, Robin and many others; still the German mind, then as now, led in all researches demanding patient toil and close analysis.

Pathological histology had still to overcome world-long prejudices. Probably no barrier was more instrumental in retarding the recognition of the *cell* as the initial point in pathology, than the thralldom and prejudices, which *systems* had so long wove around it. Much of the last century was passed in arranging and re-arranging the classification of diseases. Even during the present, many leading minds have found their chief glory in creating a system of pathology, passing from artificial to natural systems. None had, however, constructed one which could be termed scientific, and be accepted as a basis by all physicians. Before a new era could be fully developed, an emancipation must be attained from these systems, and classification in disease must not be deemed essential. Dogmas in every science are the same; when established they are the expression

of general conviction, and become after a time chains which hinder the ulterior development of thought. After years of toil and labor, Virchow comprehended this position. In renouncing all attempts to create a system, he was disembarassed from the last chains of dogmatism. In reducing disease to its cell life, he could reject the principal theory which governed science, rendering classification necessary, viz.: the unity of diseases; the idea that each malady, constituted, so to speak, a being apart, a particular form of existence, which penetrated into the economy as a *foreign* body, and which should thus be maintained along with the sound parts. Disease and life are now no longer regarded as two things marching together; on the contrary, the true material existence is *found in the cells*, the elements of the body.

Fifteen years have not elapsed since Virchow, in a series of lectures gave the results of his studies to the medical world, and now the doctrine of cellular pathology is universally regarded as the basis from which all morbid manifestations must be studied. Later investigations have modified some of the details of Virchow's teachings. These relate chiefly to the genesis of the *cell* proper, its physical and chemical characters, and the many and varied vital phenomena which originate in it. Such differences of opinion in no way invalidate the fundamental principle of the doctrine. The dogma is accepted that organic life, vegetable or animal presents as last analysis a particular element, possessing always common characters, viz., the *cell*, characterized by the nucleus, the nucleolus, the contents and enveloping membrane. The presence of each of these elements is necessary to constitute a living cell, and from it all tissues of the organism are formed. Virchow following this accepted truth in relation to the normal condition

of tissues, has shown that it is equally applicable to pathological productions. His words are, "that every pathological production has its analogy in physiological formations. The elements of every pathological formation resemble and may be compared to normal elements preëxisting in the economy."

Discarding the idea of the *specific* character of certain morbid products, he further says "we shall always find a physiological process resembling the march of pathological neoplasms, and admitting of similar classification. Certain pathological productions are composed exclusively of *cells*, as epithelial tissue; or again, those analogous to conjunctive tissue, which besides the cell elements, contain also more or less conjunctive tissue; or there is a third group of morbid tissues, resembling the higher order of organizations, as blood, muscles, nerves, &c. Most morbid organizations belong to the first two classes."

From considerations upon the structure of organizations, he passes to that of function. "Every living element of the human body responds to an excitation in manifesting its activity. This activity is awakened for three different reasons: for the performance of function, of nourishment, and of increase. Hence arise three sorts of irritation: that which augments the organic function; that which accompanies an exaggeration of nutrition; and that which causes the formation of new parts."

On the other hand beside these inflammatory processes in which the cells are *active*, Virchow studies a series of alterations which he calls *passive*. In this latter form the elements may be completely destroyed, as in fatty and amyloid degenerations, or be deprived in a great degree of their activity. Even in these destructive forms he demonstrates physiological analogies. The

normal types of these pathological evolutions, are found in the normal secretions of the sebaceous glands of the skin, in colostrum, and the corpora lutea of the ovary.

Hereafter the studies of normal and pathological histology are indissolubly connected. Starting with the cell as a common initial element, pathology must study it, in its aberrations, based upon an intimate knowledge of its normal characters. Simple as it may seem in principle, yet these aberrations are as infinite and varied as are the forms and intermingling of normal structure. Nor are these revelations made to the indifferent or inexperienced observer. To discover them requires, in most instances, the most delicate manipulation and tact in the use of optical appliances, as well as the many chemical and physical accessories to prepare structures for careful examination. The stimulus for minute research has carried mechanical and optical refinements to the most elaborate scientific formulas. Within a comparatively recent period, the "immersion" lens, by lessening very much the refractive power of light upon the polished surface of the lens, has aided much both in illumination, and penetrating power in the examination of objects.

It is this special tact and education, together with the time requisite for the various manipulations, which have thus far acted as serious hindrances to the spread and general acceptance of cellular pathology. The want too of these has furnished the ready sneer for the cynics in medicine, that one could see whatever he pleased, since there was no way of verifying what was only cognizant to the individual observer. It created, so to speak, an aristocracy in this field of study; and however desirous one might feel to verify in his own researches the truth or falsity of certain descriptions, such verification was impossible, from the barriers which the

subject itself presented. The student must, in most cases, be content with the imperfect representations which an observer's drawings had furnished. The interests of science, however, cannot brook such an obstacle. She has too many resources, readily available, by which this exclusiveness can be overcome. The bonds of union between different departments of science are too intimate, and interlaced by too many affinities to allow any one to fail from want of support. Wherein the microscope cannot popularize, photography must come to its aid, and so perfectly has she already been taught, that the image produced is, in many respects, superior to that which direct microscopic observation reveals. Hereafter, tissue or structure shall be its own delineator. No imperfect description, no vivid imagination, no overwrought theory shall affect the truth of representation. It is a wonderful triumph of art. Tissues, requiring the magnifying power of one thousand diameters, are printed of any size, with all the distinctness and vividness of outline, which the most skillful and delicate manifestations can give to the eye of the observer.

This popularization, so to speak, of the most hidden and minute recesses of nature, is due to the labors of one of our own countrymen. Very properly, too, it originated in that grand museum at Washington, formed and nurtured under the auspices of the Surgeon General of the army, becoming not only the depository of the large experience of our late war, but returning to the profession at large practical benefits, the value of which cannot be estimated.

The experiments in photographing by artificial lights, either electric, magnesian, or oxy-calcium, of microscopic objects under great magnifying power, has first been performed by Dr. J. J. Woodward, of the United States

army. His success has been all that the most ardent student could desire. Not only do his own observations verify those of Cohnheim upon the histology of minute blood vessels, but by a series of photographs, are delineated, not only the epithelial cells of the capillaries with their nuclei, but also the stomata between these cells, said to give exit to the white corpuscles. The bearing of these facts upon the theory of inflammation, is familiar to those who have followed the discussions based upon these discoveries. I regard the practical exemplification which these photographs furnish as the most positive claim which pathological anatomy has thus far presented for scientific recognition. Our studies at once become more interesting and personal, for we know that we reason from the same premises, study the same tissue, which was once the exclusive favor of some skillful observer. The property of one has become the common property of all. Let us hope that the ingenuity of the gentleman who has so far perfected his mechanical appliances, may be further encouraged in his large field of labor. We recognize that he has established an era in the study of pathological anatomy, equivalent to that which marked the application of the microscope as a means of research.

It must not be understood from the tenor of the foregoing remarks, that histological pathology can or will replace studies in clinical medicine. The vast array of facts which this latter has already afforded to the pyramid of positive medicine are too valuable to be discarded or forgotten. Rather does pathological histology perfect the symmetry, fill in the many interstices, and give harmony and symmetry to the structure.

I have thus hurriedly, and necessarily, imperfectly, reviewed the past and the present of pathological anatomy. No attempt has been made to consider its special

relations to tissues, or the different forms of heterologous growths, for the literature of these subjects is ample and accessible. I have rather traced the growth of that idea which originating but a century since, when medicine had scarcely made any material advance in the twenty-two centuries which had elapsed since the wonderful symptomatology of Hippocrates, has since advanced with marvellous strides, and already lays a claim of *exactitude* among the sciences. Pathological anatomy can no longer remain a secondary chapter in the study of pathology, but calling to its aid all the resources of art and science it must take a first position. "It must in studying alterations go back to their origin, determine the producing cause, the modes of termination, elucidate the methods of spontaneous cure, signalize the resources of art. Interrogating morbid phenomena, it will not separate organs one from another, but comprehending all changes, in their connections and reciprocal influences, it will always have in view the entire organism, recognizing at the same time all the physical and moral conditions peculiar to the patient. Studied thus, it will become more and more a science full of interest, furnishing for the art of medicine most useful aid, and constituting a most powerful auxiliary to its practice."

THE PHYSIOLOGICAL ACTION AND THERAPEUTIC USE OF CHLORAL.

BY DR. J. B. ANDREWS,
Assistant Physician, New York State Lunatic Asylum.

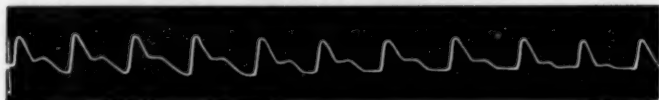
Continuing investigations into the effect of remedies upon the circulation, as shown by the sphygmograph, we present this paper upon chloral. Experiments to determine differentially the effect of chloral in health and disease, have been made, and frequent pulse tracings taken. The following experiments were made upon a person in a state of health. The range of dose was from 10 to 60 grains.

EXPERIMENT WITH 10 GRAINS.

The pulsations were reduced 6 in the minute, and slightly increased in volume. Drowsiness scarcely observable.

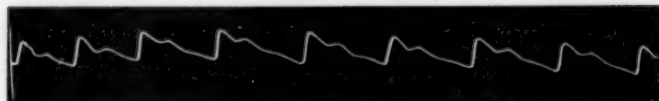
EXPERIMENT WITH 20 GRAINS.

Trace before taking chloral.



Number of pulsations 78 to the minute.

Trace 5 minutes after.

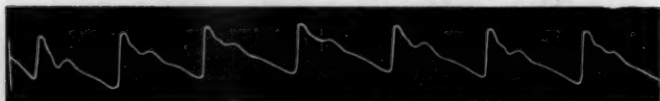


Number of pulsations 72 to the minute.

[NOTE.—We present only a section of the tracing for 10 seconds, but sufficient to show the character of the pulse.]

In the trace taken 25 minutes after, the pulsations were 66 to the minute, and increased in volume, as shown by the greater depth of the perpendicular line.

Trace 50 minutes after.



The pulsations have fallen to 54 to the minute and the volume is notably increased. This presents the most marked change. From this time the pulse gradually resumed its original character. The sensation of drowsiness was increased, but sleep was not induced.

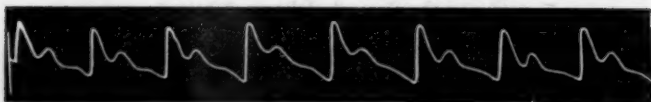
EXPERIMENT WITH 30 GRAINS.

Trace before taking chloral.



Number of pulsations 84 to the minute. In ten minutes they were 72 to the minute.

Trace 20 minutes after.



Number of pulsations 66 to the minute. Much increased in volume.

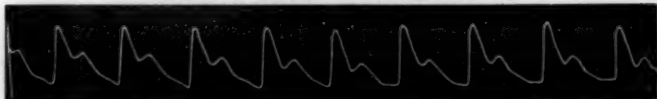
Trace 60 minutes after.



Number of pulsations 60 to the minute. Lessened in volume, but retained original form of trace. The sensation of sleepiness was easily resisted.

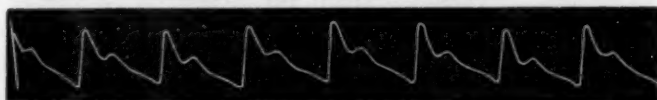
EXPERIMENT WITH 40 GRAINS, given an hour after a full meal, and when digestion was at its height.

Trace before taking chloral.



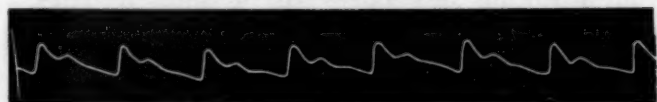
Number of pulsations 78 to the minute. Fifteen minutes after, the pulsations were 72 to the minute.

Trace 30 minutes after.



Number of pulsations 66 to the minute. No marked change in the volume.

Trace 90 minutes after.



Number of pulsations 60 to the minute; much reduced in volume. This state of the pulse continued some hours. There was a more marked sensation of drowsiness, which was with difficulty resisted.

EXPERIMENT WITH 60 GRAINS.

Trace before taking chloral.



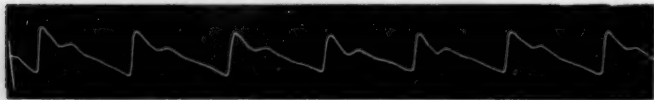
Pulsations 66 to the minute.

Trace 30 minutes after.



Pulsations 60 to the minute. No marked change in the character of the trace.

Trace 75 minutes after.



Pulsations 54 to the minute.

Trace 3 hours after.



Pulsations 54 to the minute. Greatly lessened force in the heart's action. This character of the pulse was continuous for some hours.

The effect of the dose was felt within three minutes after taking it. There was a sense of heat and burning in the stomach, and a tingling sensation in the extremities. Drowsiness was experienced, and a strong effort was demanded to keep the eyes open. In fifteen minutes sleep followed in spite of resistance; but he was aroused while a pulse trace was taken; he was then talkative, tongue was thick, speech indistinct, and he presented the characteristics of intoxication. After half an hour there was a contraction of the pupil as in natural sleep. There was no complaint of pain or abnormal sensation in the head. After one and a half hours he fell asleep, and slept for an hour: awoke, and after three hours was again overcome by sleep for an hour. The respirations were undisturbed and normal, and the sleep quiet and natural. He was easily aroused, but readily went to sleep again. After three and one-half hours he awoke and took a hearty meal. His gait was unsteady, as if somewhat intoxicated. Five hours after taking the dose he went to sleep, and slept for four hours.

From the experiments, of which we present a few of a large number of tracings, we conclude, in regard to the physiological action :

1. That the effect of chloral is to reduce the number of pulsations. (In experiments from 84 to 54.)

2. That the primary action is to increase the force of the heart's action and arterial tension.

3. That in large doses, within safe limits, the pulsations are not reduced in number proportionately to the size of the dose ; but the effect is more prolonged.

4. That the secondary effect is to diminish the force of the heart's action and the arterial tension. This will be apparent by comparing the number of pulsations, and the dicrotism of the first tracing with the last in the fourth experiment.

These conclusions are in part confirmed by other sphygmographic experiments made by Dr. Anstie, Editor of the *London Practitioner*, who says, that the traces indicate an unmistakable elevation of arterial pressure. Bouchut also confirms the statement.

From twenty minutes to one hour after taking the dose, the phenomena attending its action can be well studied, and the most marked changes in the circulation will have taken place. These, as given by Liebreich, are disturbances of the mental, sensitive and motor nervous system, similar to those produced by chloroform ; with this difference, that the effect is more gradually secured and of longer duration. They are however, in the order in which we have observed them, a sense of heaviness of the head, a tingling of the extremities, a feeling of weight as if the part was asleep, and gradually increasing drowsiness. There is an inclination to talk, with thickness of tongue, and inability to speak plainly, especially if the patient is talked to, or otherwise disturbed. If he is quiet he yields readily to sleep, and this

intoxicating stage will not be as noted. Then occurs the profound sleep of the chloral. On awakening, if the effects have not completely passed off, there may be a recurrence, in a mild degree, of the stage of intoxication.

Liebreich asserts, and this has been confirmed by subsequent observers, that chloral acts by being decomposed by the alkalinity of the blood, with the evolution of chloroform. In this view, giving chloral is but another mode of administering chloroform. The great and practical advantage is in the slowness of its action and its ready control. Those cases in which it fails, after a full dose, to produce the desired effect, are supposed to depend upon the acidity of the secretions of the system. The temperature of the body is somewhat reduced while under the influence of chloral in the usual dose, which tends to prove the assertion that the remedy contracts the capillaries, and thus repels the blood from the surface toward the centre of the body. The actual reduction after the ingestion of an ordinary dose, is according to Bouchut, usually but from 3-10 to 5-10 of a degree centigrade. The highest reduction he has ever seen, was 12-10 of a degree. Probably some of this lowering of the temperature may be due to the lessened cell metamorphosis, from the sedative action of the remedy; and hence, its value in fever, in which there is a high temperature, the result of rapid changes of cell tissue.

From the same authority we learn that the urinary secretion is profoundly modified. Directly after waking from the chloral sleep, little change in the urine is observed, but the next day it is increased in density. The cause of this change, Bouchut is inclined to attribute to the chloral which is eliminated through the kidneys.

Prof. Wherrell announces that the amount of uric acid is increased by the use of chloral. Of its effect on the brain, Bouchut says, that in consequence of retarded circulation, there results capillary congestion, and hence debility. Dr. Alex. Max Adams, in the *Glasgow Med. Journal* for May, 1870, says, chloral does not lead to congestion of the brain, and is therefore peculiarly applicable to the treatment of head affections. Our experience confirms this view. If congestion occurred, the waking from chloral sleep would not be without marked after-effects, and especially there would not be such rapid recovery of tone as is observed in cases where large doses have been administered.

Chloral has been used largely in the Asylum since February, 1870. The whole amount used is 90 lbs., which has been prescribed in 370 cases, as follows:

FORM.	M.	W.	TOTAL.
Mania,	69	119	188
Melancholia,	30	59	89
Dementia,	18	50	68
Paresis,	12	1	13
Epilepsy,	2	2	4
Employés,	3	5	8
	134	236	370

The average length of time of administration has been to the men 39 days, to the women 43 days. In a case of melancholia marked by the most distressing delusions and wakefulness, it was given in 20 grain doses, for 257 nights, as a hypnotic, without losing its effect, and with the happy result of securing refreshing sleep. The patient recovered. In this case, as in others, the value of the remedy was tested by occasionally intermitting the dose. Sixty grains were administered during an attack of mania for 195 nights in succession.

The following is a tabular statement of a few cases in which the chloral was given nightly for a protracted period:

MEN.

DOSE.	DAYS.	FORM OF DISEASE.
60 grains	195	Acute Mania.
40 "	126	Melancholia.
30 "	175	Melancholia.
30 "	105	Melancholia.
20 "	221	Melancholia.
20 "	255	Melancholia.
20 "	130	Melancholia.

WOMEN.

DOSE.	DAYS.	FORM OF DISEASE.
40 grains	236	Acute Mania.
40 "	222	Acute Mania.
40 "	207	Melancholia.
30 "	195	Chronic Mania.
30 "	187	Chronic Mania.
20 "	257	Acute Mania.
20 "	159	Melancholia.
20 "	207	Melancholia.

In several of these cases the medicine is still continued, and in a few of them the dose has been repeated, once, twice or three times a day, in from 10 to 40 grains. The average dose employed is 30 grains. The limit from 10 to 120 grains. The latter dose was given in a case of profound melancholia, with good effect.

In cases of insanity of either an acute or chronic character, the great value of the remedy is as a hypnotic. In the result when used for this purpose, we are rarely disappointed. Patients who would otherwise be out of bed and noisy at night, to their own injury and the disturbance of a ward, are usually quieted and kept in bed, and at last put to sleep, by a dose of chloral timely administered. The great advantage to be derived from

a remedy of this character, can nowhere be more fully appreciated than in an institution for the insane. It is also administered during the day in smaller doses to act upon the motor nervous system, and as an ordinary nervous sedative.

Cases in illustration.

Man, acute mania, noisy, destructive, sleepless and talkative. He had been blind for four years and disease of the optic nerves had been diagnosed by Dr. H. D. Noyes, of New York, who gave the prognosis of disease of the brain and probably insanity. Prescribed at first 60 grains of chloral at night. This secured sleep, but maniacal violence continuing through the day, chloral was given in 20 grain doses three times a day.

Whenever the remedy was discontinued for a few days, he returned to the former condition of maniacal disturbance, and on its renewal, the excitement soon subsided: finally it was continued for three and one-half months, at which time the most prominent symptoms had yielded.

Woman, melancholia, depressed, moans, wrings hands, opposes care, endeavors to force doors, restless and sleepless. Sleep produced by 20 grains of chloral, and under the same dose, repeated twice a day, she is quiet and comfortable, and employs herself in sewing. Her delusions though still existing, have lost their controlling force.

The cases of dementia in which chloral has been employed are those attended with maniacal paroxysms, and the result has been the same as when given in mania. In paresis it has been administered in a majority of the cases under treatment during the year. Several of these were in the first stages of the disease, with exalted delusions attended with sleeplessness. Others were further advanced, noisy, sleepless, shouting,

violent, destructive. Chloral in 30 grain doses generally produced sleep and allayed excitement. In epilepsy, it has been given, during the maniacal period following a fit, with the same effect as in mania. It has been recommended as a remedy in epilepsy, but has not proved of any value, in our experience, in warding off or modifying the seizures.

The advantages of chloral are: It is a hypnotic which seldom fails to produce sleep, which usually lasts from four to eight hours.

The sleep is natural, and one from which the patient can be easily aroused.

It is more generally tolerated by the stomach than other sedatives.

It does not constipate the bowels or disturb the secretions.

It does not injuriously affect the appetite.

It rarely produces headache, or leaves unpleasant effects.

It does not lose its power by repetition, but the dose may often be reduced after the patient has become accustomed to its use, and seldom demands to be increased.

When the necessity for its use has ceased, it often for the first time, becomes disagreeable to the patient.

Thus far we have met with no case where its administration has induced the habit of its use, which is one of the dangers of opium, *Cannabis Indica*, &c.

It allays muscular spasm and rigidity.

No ill effects have been experienced from its use in cases of disease of the brain.

We have observed no ill effects from its use in the reduction of the pulse or of the temperature.

In cases of the opium habit, it has proved a valuable remedy to secure quiet and sleep, and allay nervous irritation until the system has rallied from the depress-

ing influence of the former drug. In insanity, it is particularly useful to quiet restlessness and muscular activity. The strength of the patient is thus preserved, and time is gained for building up the general health by tonics and nutritious diet.

Its ill effects we have observed are :

In some instances, it has induced nausea and vomiting.

Unless largely diluted it produces a burning sensation in the fauces and stomach.

In many cases its influence is very rapid, the person falling asleep at once, which sometimes gives alarm to those unused to it.

We give the following case in which its effect was unusual, and remarkably prolonged.

A young man, 29 years of age, was much broken down in health, from wounds, sickness, and exposure in the army. He was a prisoner for a long time, and so much debilitated from starvation in Andersonville, Florence, and other prisons, that he was delirious and unconscious for five days after having been exchanged. Was wounded in the shoulder, and right iliac region. This wound involved the crest of the ilium, and at date of writing, (May, 1871,) is still open. He suffered long after his discharge from chronic diarrhoea. In 1868, while on passage to Mexico, he was wrecked, and being without adequate food or shelter for several days, was much reduced in strength, and contracted yellow fever, from the effects of which he has never fully recovered. For past few months has been employed as an attendant in the asylum. For a week or so, he lost in appetite and general health, and in this weakened condition attended his brother while sick, and sat up with him three nights. The first night he slept some three hours, the last two, none. During forty-eight hours he ate little, and for twenty-four hours took no nourish-

ment, and smoked once. On Sunday morning, he returned to the asylum, took no food, was wakeful, nervous and excitable. Knowing the necessity of rest, and fearing he would not go to sleep without the aid of a sedative, he obtained from the apothecary the usual dose of chloral, 30 grains, in watery solution. He went to bed, passed into a dreamy condition, soon became uneasy and restless; kept getting out of bed, and staggered around his room and ward. He continued under full influence of the chloral till the following Friday morning. He then dressed himself with difficulty, but was unable to walk or stand alone; slept most of the time on a lounge or a chair. On Saturday he was able to stand alone, but was still sleepy, and during the night was restless and out of bed. On Sunday, one week from the day on which he took the medicine, he was fully awake, but had some nausea and loss of appetite. During the whole time he was nourished by liquid food, milk, soup and essence of beef. He was raised up in bed and fed, by being told to swallow, as each spoonful was given him. Milk punch was added to his diet, and continued three times a day. His bowels moved regularly, and he made known his desire to go to the closet, but was helpless. Anæsthesia was marked, and though when the limb was deeply pricked it was withdrawn, the action was purely reflex and without the knowledge of the patient. He lay with his hand under the right temple, and firmly pressed against it, and says that before he fell asleep, and after he awoke, he had a severe pulsating pain in the head. During the whole period, he had but two intervals of complete consciousness; one for a few moments on Tuesday morning, when he recognized the physician and talked coherently, though he fell asleep after each question and snored heavily, said

he was very sleepy, begged to be aroused, said that his eyes were blurred, and though he could distinguish faces, they were indistinct and moved toward him and then receded; that objects in the room rose before him as when intoxicated. The other interval was for a short time on Thursday afternoon. At any time of the whole period, if shaken and talked to, he could be made to reply, but had no recollection of it. His pulse varied between 60 and 65 beats, and was strong and full. There was no blueness of lips or disturbance of the circulation, and for this reason, little uneasiness was felt about the result. The pupils were contracted as in natural sleep. The action of the skin was undisturbed, and the urine normal under chemical and microscopic examination. The chloral taken was of Squibb's manufacture, and the same that is in constant use at the asylum. It was in fresh solution in water.

There are some interesting queries suggested by the case.

Was this condition due entirely to the action of the drug?

Was it the intoxicating effect of the chloral thus prolonged, or did the remedy simply induce a state of slumber of a cataleptic character, prolonged by the relaxation and reaction from the nervous tension, and by the abstinence from food during a long period of watching and anxiety? Dr. Coghill, of Edinburgh, has reported a somewhat similar case.

Of the effects of Chloral on the eyes.—In several instances soreness of the lids has been noticed when patients were taking the medicine, and, at first, it was attributed to the influence of the drug; but in none of the cases in which it has been taken for long periods has any such result occurred.

One case of paroxysmal mania was troubled with

inflammation of the lids, with profuse purulent discharge. This took place simultaneously with increased mental disturbance and when the patient was taking chloral; but during the last period of excitement, although the medicine was repeated in the usual dose, the inflammation has subsided, and the lids are in a normal condition. In other cases in which there has been redness and swelling, it has disappeared during the continuance of the remedy. No paralysis of the eyelid, which has been noted by some observers, has ever resulted in our experience of the use of chloral.

From the reports of institutions for the insane, we make a few extracts, in regard to the use of chloral.

Dr. Earle, of Northampton, says: "For rapidity and certainty of effect in that direction (producing sleep,) it appears to have no equal, unless it be opium. The sleep induced by it is more transient than that from opiates, but it has none of the disagreeable consequences that in some constitutions follow the use of them."

Dr. Brower, of the Eastern Virginia Asylum, says: "We have made a thorough trial of the remedy, and are satisfied it is a valuable addition to our *Materia Medica*."

Dr. Lewis, of the Northern Ohio Asylum, says: "it is a valuable addition to our means of procuring refreshing sleep in those cases laboring under acute or chronic mania. As a hypnotic it is superior to opium, it having produced sleep when the latter has entirely failed."

Dr. Shew, of the Connecticut Hospital for the Insane: "Having administered it to as many as one hundred persons of both sexes, of various ages and constitutional tendencies, we have no hesitation in saying: 1st. That it is the most sure and powerful of the sleep producing

remedies known to the profession. 2d. That it has little if any other influence than that just mentioned. 3d. It is better suited to the excited than the depressed forms of insanity. 4th. That the dose may vary from 15, to 60 grains. 5th. That a watery solution loses strength on exposure to light even when placed in a ground glass stoppered bottle. Sleep induced by an ordinary dose of chloral seems to be natural and refreshing. The patient is easily aroused, but usually speaks of being cold. If continued for several weeks a slight inflammation of the eyelids manifests itself, and in one case of violent chronic mania, when doses of sixty grains had been given as often as three times a day for several months, the bowels became slightly irritable."

Of its use in various other forms of disease we have had some experience in this institution. In cases of cerebro-spinal meningitis it has been employed with benefit to allay muscular rigidity and spasm. It produces relaxation, and relieves the tetanic contractions of the muscles of the back and neck.

Four cases of the same character, are reported in the *Indiana Journal of Medicine*, by Dr. Patton, in which the same effect was noticed. In chorea, also, a beneficial influence has been exerted upon the irregular muscular action. In one well marked case, where the head was kept in almost continuous motion, the disease yielded within a week to the use of 20 grain doses, given at night as a hypnotic. Bouchut gives four severe cases of this form of disease, in which the convulsive action was controlled, and the patients soon recovered, under use of the remedy. As a sedative in substitution for opium in cases addicted to this habit, it has proved useful. In the *Journal of Pharmacy*, a case is reported in which the patient took five oz., in five consecutive days, without injurious consequences. In a case of

opium habit by hypodermic injection of morphia, now under treatment, we have derived much benefit. We give the case in full.

Woman, single, age 30—had been addicted to hypodermic injections of morphia for three and one-half years, once, and much of the time twice a day, making in all about 2,000 injections. During the last few months had used a dram and one-half a week. She had accustomed herself to use the syringe, and inserted it perpendicularly to the surface. Each injection produced a small abscess, and the body was thickly covered with scars, wherever it could be reached by her own hand. She was much reduced in health, appetite destroyed, stomach rejected nourishment, was sleepless, and at last became noisy and maniacal. She had given up the use of the drug for a few days before admission. At this time she was pale and anæmic, and was carried to the ward in a very feeble state. For two days she was sleepless and retained no nourishment; was placed on the use of chloral in 30 grain doses. This was tolerated by the stomach: she gained sleep, the vomiting gradually became less, and soon ceased altogether. At time of writing, twenty days after admission, she is eating freely, and has gained flesh materially. No desire for the repetition of the injections exists.

In some cases of neuralgia in which it has been employed, it has produced sleep; but the patient has been restless and disturbed, and, when awakened, the pain has continued without intermission. When the sensation has been destroyed by a hypodermic injection of morphia, the insomnia which so frequently results from the opiate has been overcome, and the patient obtained refreshing sleep under chloral.

Its use in tetanus, puerperal convulsions, in allaying the pain of childbirth, in spasmodic diseases, as

whooping cough, in fevers, in incontinence of urine, and other diseases and conditions in which it has been recommended, has been fully discussed in the journals of the day.

Chloral has been used to a considerable extent in combination with other sedatives, especially hyoscyamus. This combination exerts a favorable influence in prolonging the chloral sleep, and making it less liable to be disturbed, when the effect of that remedy has begun to pass off. It has also been given with the bromides, to a less extent, but sufficiently to test the utility of the combination in certain cases. Dr. Hughes, of the Missouri State Asylum, has also used and recommends this combination to prolong the sedative impression of the chloral.

Much has been written, and the profession strictly cautioned, against the use of chloral in combination with alcoholic stimulants. No bad effect has been observed when it has been given with milk punch, beyond at times an increased degree of intoxication. Dr. McLeod, in the *London Practitioner* for August last, says: "I am inclined to prefer the stimulant, as practically I have found that patients, taking it in this way, have slept well, and the calmative after-influence was satisfactory, and the stimulant may prevent symptoms of prostration. The combination with paregoric and valerianate of ammonia is useful, and in many cases desirable. When given dissolved in syrup, as is so generally recommended, it often disagrees with the stomach and is distasteful to the patient, and less effective."

Dr. Squibb, of Brooklyn, says: "Ice-water appears to be about as good a vehicle for this, as for all saline substances, as any yet devised, and physicians who have now abandoned these mixtures (mucilage and syrup) for the simple solution, often, if not generally, advise their

patients to eat a cracker, or take some other light food in small quantity, before or immediately after an hypnotic dose." The standard house solution at the asylum is one of 80 grains to the ounce of water; this is largely diluted when dispensed. The solution is freshly made at least three times a week. The chloral used is of Squibb's manufacture, which is uniform and pure in quality.

Cases are reported in which large doses of the drug have been taken by prescription and through mistake, or for the purpose of suicide, with injurious and sometimes fatal results.

Dr. Williams, in the *Baltimore Medical Journal*, reports a case in which 600 grs. were taken at one dose, apparently with suicidal intention. The patient remained in a comatose state for eighteen hours, and soon after recovered entirely, without any remedial measures having been employed. Another case is reported in the *Chicago Examiner*, in which 240 grs. were taken by a lady in a state of bewilderment, while suffering from neuralgia. She remained in an unconscious condition for eighteen hours, but recovered, under the use of the galvanic current.

In the *Nashville Journal* is given a case which occurred in the Philadelphia Hospital service of Dr. Ludlow; 460 grains were taken at one dose. The patient fully recovered under prompt treatment.

In the *Pacific Medical Journal* a case is cited in which the patient was rendered comatose by a dose of 20 grs., but afterwards fully recovered. Three other cases are also mentioned, in the same connection, of a like character.

In the *English Practitioner* two cases are mentioned. A man and his wife each took chloral by mistake; the wife 120 grs., and the husband 180 grs. She slept 12

hours; he slept continuously for 26 hours. No ill effects were experienced in either case. Dr. Reynolds reports a case where dangerous symptoms were developed after a dose of fifty grains.

Dr. Fuller, in the *London Lancet*, reports a case in which 30 grs. twice produced alarming symptoms, and one in which the same dose produced death.

In the *Buffalo Medical Journal* a case of death is reported, where about 400 grs. were taken, seemingly with suicidal intent.

One case of death is reported in the *Medical News* of Philadelphia, in which the post mortem examination showed cerebral congestion.

In the *Medical Times and Gazette* (London) for April 15, two cases of death are given. Both were surgeons. One had extensive disease of the heart, and the other took, by mistake, an overdose; amount not stated.

We condense the following interesting report of a case of death, from the *London Lancet* for May, 1871;—by Hugh Norris, L. R. C. P.

Woman, 46, married; for seven years had been addicted occasionally to excessive indulgence in stimulating liquors. In November, 1869, had a severe attack of hysteria "complicated with spinal irritation." When opposed in her desire for stimulants, became very violent, and attacked others. Chloral was the only remedy that proved of value in allaying excitement. This she took at night in doses of from 20 to 40 grains, and continued to do so most of the time, till her death in January, 1871.

On the 3d of January, 1871, the physician was hurriedly called and found she had taken some 10 oz. of Townsend's sarsaparilla. She was in a fit of hysteria, but not considered in any danger. The Doctor gave her chloral, which he had discontinued during the last two

weeks of December. She took, by prescription, half dram doses till the 8th of January, when they were increased to an average of 50 grs. per day, in divided doses, morning and night.

She died, almost suddenly, about noon, on the 12th of January. After her death the Doctor ascertained that she had taken large doses of chloral, without his knowledge or suspicion. The amount taken, (including that by prescription and obtained clandestinely,) was as follows: on the 3d, 36 grs.; 4th, 36 grs.; 5th, 66 grs.; 6th, 66 grs.; 7th, 66 grs.; 8th, 96 grs.; 9th, 66 grs.; 10th, 158 grs.; 11th, 112 grs.—making a total of 712 grains in 9 days; the last 260 of which were taken in 35 hours.

An autopsy was held a hundred hours after death. "No odor from decomposition perceptible except in the air displaced from the lungs. There were scarcely any puncta sanguinea in the white portion of the brain, which was very fresh and firm, and little if any fluid in the ventricles. The liver was much enlarged, slightly congestive, and somewhat leathery. The kidneys were enlarged, but not apparently diseased. The heart tissue was somewhat pallid; the ventricles were empty; the auricles partially distended by dark semi-coagulated blood. Stomach not opened, body well nourished; other organs healthy but firm; no decomposition, no odor of chloroform."

A portion of the lung, liver, heart, kidney and spleen were submitted for analysis. From Mr. Stoddard's report we extract: "The first thing that struck me was the very extraordinary way in which the several portions were preserved. Even now, although more than a week has elapsed since death, yet not the slightest sign of decomposition has taken place, nor any unpleasant odor. This doubtless is the effect of chloroform in the tissues."

From the *contents* of the stomach when mixed with potash and soda, and subjected to distillation, drops of pure chloroform were obtained. This was also found in the liver, but in no other organs. There was no odor of chloroform from any of the tissues of the body, and *the contents of the stomach had no perceptible smell of it till after the addition of an alkali.*

Tests for all the poisons that were probable were used without success. Mr. Stoddard gives his opinion from the examination. "There seems no doubt that an excess of chloral must have been taken, and the resultant chloroform was so disseminated through the tissues that they were completely preserved."

As to the mode of death, Mr. Norris adopts the opinion of Dr. B. W. Richardson, "that in such cases, dangerous decomposition of the blood may occur before coma is produced, and that the repetition of considerable doses of chloral would be followed by the formation of formiate of soda in the blood, by which its coagulating power would be much diminished; and that in such cases the symptoms would be similar to those induced by loss of blood."

It is unfortunate that the post mortem was not made sooner after death than the lapse of four days, and also for the establishment of the truth of Dr. Richardson's theory in this case, that the blood and brain were not submitted for analysis. This the Doctor himself regrets. These are all the cases of death we have found reported in looking over a large list of exchanges for the past several months. Some cases of injurious effect and of death have, no doubt, escaped our search, while others have not been reported in the journals.

What medicine can be named, which has been used so extensively, which allows of such variable limits in dose, and which has passed into common use, even in

the hands of nostrum venders ; and against which so small a list of casualties can be adduced ? We know comparatively little of the drug, of its power for combination, of its decompositions when combined, or even when kept for any length of time. This opens an extensive field for experiment and study, and one which will require much time for thorough investigation ; and till this is done, we cannot accurately judge of the real value of the remedy to the profession and the world.

INSANITY IN RELATION TO LAW.

BY HENRY LANDOR, M. D.,
Superintendent of London Asylum, Ontario.

[Read before the Association of Officers of Insane Asylums for the United States and Canada, at its Annual Meeting, in Toronto, June 8, 1871.]

INTRODUCTION.

Attention has been recently drawn in the journals of Psychology of both continents, to the law in relation to Insanity.

Last year I put into its present form the substance of a lecture delivered by me eight or nine years since, in the Mechanics' Institute, London, Ontario, addressed especially to lawyers. I did not succeed in interesting the lawyers, I suppose chiefly from my own deficiencies as a lecturer, or from insufficient power in handling the subject, or because lawyers are not to be interested in abstract matters. Since last year there have been articles in the *AMERICAN JOURNAL OF INSANITY* on the state of the law, and I am glad to see that the tenor of those articles is towards the views I advanced so many years ago.

I therefore reproduce the subject of my lecture in a different form, and I take advantage of those articles now, as in my lecture I availed myself of opinions, and statements, and arguments supporting my convictions

wherever I could find them. And as at this distance of time I have forgotten where those statements were found, I must leave them without being able to acknowledge my obligation to any particular individual, nor do I claim any originality for statements known to all of us. This is not of much importance, as Psychological physicians are all acquainted with these things, and my object is not to tell a well known tale to them, but to induce them to impress, more effectually than I can, this most important subject on all Legislators and Judges and all other influential authorities, who have the power and influence to alter a state of law disgraceful to common sense, and baneful and injurious in the highest degree to those unfortunate people who come under its operation. If the three papers of April last, in the *JOURNAL OF INSANITY*, had been published earlier, mine would probably have never been written.

There are no positions in which medical men are placed where they make so discreditable an exhibition as in trials where insanity is pleaded or attributed. This is chiefly the fault of the law, which is the same in the United States as in England and Canada, and which lays down the principle that a knowledge of right and wrong is the best test of soundness or unsoundness of mind. And the state of mind of the criminal or defendant at the time of the commission of the crime is left to the decision of twelve men of such ordinary intelligence as pertains to the average of common jurymen. And medical men are left to squabble over the puzzle whether the unfortunate subject knew right from wrong, a knowledge which, to judge from common observation, is as far from the powers of very many sane people as from the insane. No wonder, then, that, when medical men are retained on both sides, and their opinions pitted against each other, and extract-

ed from them by ingenious counsel, they display deficiencies and absurdities that make the profession despicable in the eyes of intelligent men. It would be a marvel if this were not the result, especially when the medical men are not experts, but are often men who never had any knowledge of this branch of study; and very probably never gave the individual subject, or the peculiarities of the case they are witnesses for, any deep consideration before they make their appearance in court. As I believe this very discreditable exhibition in most vitally important matters, is due to the deficiencies of the law, and not of science, I make these few remarks in the hope of influencing law-makers through the medical profession, not to give medical men information on matters familiar to them in a higher degree than to myself.

What Dr. Johnson said of any one who should attempt to define poetry, may be well applied to him who attempts the definition of insanity,—“that such attempts show the narrowness of the definer.” I think it is quite impracticable to propose any definition free from objections, which can comprise every form of mental disorder. Locke’s celebrated dictum, that “Madmen do not appear to have lost the faculty of reasoning, but having joined together some ideas very strongly, they mistake them for truths, and err as men do who argue from wrong principles,” has a very partial application, comprising only those cases in which the patient is the subject of a delusion, illusion or hallucination, and acts as he would properly act were the delusion a reality. Locke’s great name, and the authority given to all that he wrote, gave rise a century since to the legal dictum, that to prove insanity in the eye of the law, delusion must be shown to exist. In law there are only two

legal forms of insanity; idiocy or imbecility, and delusion leading to acts opposed to law. But as the legal test of imbecility and of delusion is the knowledge of right and wrong, these two forms become practically one. This maxim has guided all legal decisions, and given origin to endless acts of injustice, committed in the name of the law, and by authority of the judges. It has been the source of all the conflicting opinions and statements of medical men, when under examination on evidence before the Courts. It has been at the bottom of all judgments and enactments, and is the foundation of recent attempts to amend the law, and it is the cause of all the difficulties that now impede the administration of justice. Until the law shall recognize a more comprehensive disorder than it includes under the head of delusion, and admit of a better test than a knowledge of right and wrong, no improvement can be effected. Any estimate of insanity ought to make the mind of the individual alleged to be insane, not that of the physician, the standard to determine his insanity.

This is the text from which I preach. Therefore, the happiest definition yet propounded, though by no means perfect, is that of Dr. Combe, who says: "Insanity is a morbid action in one, in several, or in the whole of the cerebral organs, and, as its necessary consequence, functional derangement in one, in several, or in the whole of the mental faculties those organs subserve." If the principle on which this definition is founded is the right one, and that it is essential to institute a thorough examination of the individual's past and present condition before determining his state of mind, then the definition and proceedings of lawyers are in complete antagonism to this and to truth. There can be no antagonism between principles more complete. Medicine declares that insanity is a physical and corporeal disease. Law

that it is not. Medicine says that imbecility and insanity are different conditions. Law that they are identical. Medicine asserts that a theoretical study to mental diseases and defects is necessary to a proper understanding of such diseases and defects. Law denies this, and says that insanity is a fact to be determined by any dozen of ordinary men in consultation on the case selected at random from any class of the population. Medicine says that a man may be insane and irresponsible, and yet know right from wrong. Law says that a knowledge of right and wrong is the test both of soundness of mind and of responsibility to the law. Medicine says restrain and cure the insane and imbecile sufferer. The object of the action of the law is punishment, and if its severity is mitigated, it is not by the law, but by the suspension of the law, by authority above the law. The law is thus entirely antagonistic to medicine on all those questions of mental science which involve the freedom and well-being of the imbecile and the insane, and which often determine whether they shall be put to an ignominious death or not, whether they shall be deprived of their property or suffered to retain it. This antagonism is therefore a most serious matter to the insane, their friends and families, not less serious to Judges and Legislators, and of the deepest interest to both medical and legal professions. For with such opinions inculcated by the law, existing ignorances are more deeply rooted in the public mind, so that the difficulty in treating the insane by medical men, and in giving testimony in Courts is greatly increased: especially when great Judges remark, (influenced no doubt by the degrading exhibition of opposing bitterness of medical men in Courts,) "that the introduction of medical opinions and theories on this subject has proceeded from the vicious principle of considering

insanity a disease, whereas it is a fact to be ascertained by evidence, in like manner as any other fact, and no more is necessary than to try the question by proof of the habits, the demeanor, conversation and acts of the alleged lunatic."

Now we decidedly adopt this principle denounced as vicious, and we cannot study insanity in any other way, and we point with pride to the vast amelioration in the treatment and condition of the insane produced solely by the persistent development of this great truth, that insanity is a disease, and not a subject of moral enquiry.

This a great lawyer calls an evil habit and vicious, because of its results in having induced Judges to assume that they are bound to accept medical testimony in reference to insanity, and are thus forced to accept speculative views instead of their own moral conclusions as to whether a person whose civil rights and responsibilities are involved, is insane or not; whereby justice between man and man, or between man and society, is hindered. Therefore, he adds, it is absurd to suppose that medical science has special business with the detection of insanity in legal cases. Is it indispensable that medical men should be called to discover whether a man is a lunatic? (These are the expressions of Lord Chelmsford.) There is some excuse for this contemptuous opinion of medical testimony in cases of insanity, afforded by the bearing of medical witnesses in many difficult and celebrated cases. There are many cases of insanity which no man could mistake for sanity. On the other hand, as we well know, there are obscure, and subtle, and insidious forms of disease, that try the acumen and patience of the best and wisest among the most experienced physicians.

There is an article in No. 71 of the *Journal of Men-*

tal Science on the examination of insane in Courts of Justice. It appears by that article that the vicious principle of testing insanity by a knowledge of right and wrong, is even yet common in the Courts of England, France and America, and when an unfortunate lunatic escapes punishment it is never due to the law, but to the knowledge and energy of some physician who exerts himself to hinder injustice allowed by the law.

The remarkable statement of the surgeon to the General Prison of Scotland, and also of the physician of the Rouen Prison, of the number of insane among prisoners, is only more evidence of the necessity of informing the legal profession on this most vital point. It appears that one in every nine prisoners is more or less insane, and one in one hundred and forty altogether irresponsible. When it is considered that the criminal population of London are a population by themselves, intermarrying and breeding amongst themselves, and propagating their tendency to crime, their vices and their diseases, we may almost conclude that law is helpless to amend, and that medical science must be appealed to, to accomplish the reformation of criminals.

From the tenor of the reply of Mons. Brierre de Boismont to the Committee of the English Association, it seems that the legal profession in France have no conviction that insanity is a disease of structure, and not a mere moral evil.

In the discussions at the meetings of the English Association on the paper of Dr. Richardson on "Mental Strain," there seems too great a stress laid on the moral phenomena, and too little on the cerebral complications. Drs. Bucknill and Tuke still classify the forms of insanity according to their moral manifestations. But I look forward to the time when the pathological condi-

tions shall afford us a classification founded on structural alterations, and I hope the time is fast approaching, when every insane manifestation will be recognized as the symptom of some alteration of cerebral structure or function, produced by some other bodily disorder.

That insanity is a disease of the brain is a doctrine of high antiquity; it is contained in the oldest Greek Classics on Medicine and Philosophy. It is true that in ancient times epileptic and hysterically delirious girls were believed to be inspired, and were used as the discoverers of the unknown, much as clairvoyants of the present day. They were submitted for cure to professional exorcists, who, for a consideration, undertook to dispossess the demon by mysterious processes, as spiritualists cure disease in this age. But this was not the medical view then more than now. Hippocrates, in his essay on the "Sacred Diseases," controverts and ridicules these popular superstitions; and these strange and awful doings of the sick, in the estimation of the ignorant, are shown to be due to the disordered functions of the brain. This was the current view amongst the educated professional men and intelligent laymen. Since that period this idea has never been lost, so that it may be truly said that educated members of society have regarded insanity as a corporeal disease for at least 2,300 years. The somatic or corporeal doctrine that cerebral disorder is associated with every manifestation or form of mental disorder or defect, gains ground in every generation. Now it necessarily follows that if this doctrine is true, of the inseparable association of cerebral and mental activity in morbid conditions, it is equally true in the healthy states of the mind. Hence it is laid down in recent works, that no change whatever in the consciousness, whether it be ordinary sensation, perception, or idealization, or voli-

tion, takes place without coincident and necessarily coincident changes in the cerebrum. Modern metaphysicians do not withhold their consent to this doctrine. Now it would be gratifying to find in the speeches and decisions of great lawyers any traces of a dispassionate inquiry into the truth of this ancient and established doctrine, and into the number and validity of the facts upon which it is founded. But no such traces can be found, so that we are inevitably driven to the conclusion that they are either ignorant of it, or have condemned it, or else have legislated without such a dispassionate inquiry as is alike due to the people and the profession.

Our regret is all the greater since nothing is so open to proofs by any man of ordinary intelligence who will discard all speculative preconceived opinions, and examine as a pure question of facts. It is open to every man to ascertain what changes occur in his own mental activity, under the influence of certain bodily conditions, or of agents modifying those conditions. For example, when engaging in abstruse calculations, such as the calculation of Asylum statistics by algebraic formulæ presented to the Association a year ago, demanding exercise of clear intellect, let him drink a few glasses of whisky, or smoke a little opiated tobacco, and he will soon find himself incapacitated for completing his calculations. Or let him breathe a few whiffs of nitrous oxyde and his reason will be gone, and he will be ridiculously insane; or take chloroform until unconsciousness is complete. Or if he watches these things in others, he will have the testimony of his own senses to the facts. Beyond this no testimony is needed, except that afforded by the study of diseased conditions. Physiologists justly look upon man as an animal, high above his fellows, but still an animal, differing not so

much in kind as in degree. Hence they experiment on their own nature in the animal world below, and find everywhere proofs of the physical doctrine of mental manifestations, and diseases, and defects, which makes it difficult to resist the conviction of its truth. Cats, dogs, foxes, rouge elephants, and nearly all other animals, are subject to insanity, which no Theologian, however wedded to his systems, would call in them a moral disease; and no physiologist can point out any difference between them and man, as regards the nature of the disease, or its seat.

Jesse, Maudsley, and many other observers of the habits of animals, state, "they possess those combinations of mental endowments and acquirements known in and by man as wisdom, sagacity, intelligence, intellects, sense, thought, judgment, prudence, discrimination, shrewdness, knowledge, learning, shame and pride, illustrations whereof are to be found in the dog, horse, elephant, ant and bee, and numerous other animals. There is no mental attribute, not even language, if by language is meant uttered sounds which convey ideas to others of their kind, peculiarly or characteristically human. There is, therefore, no essential mental distinction between man and animals."
—W. Lauder Lindsay, M. D.

Here is a mere metaphysical argument tending to the same end. Every man has within his own consciousness the strongest proof of the doctrine; for since every change in that consciousness corresponds to vital changes, without which it cannot occur, these conscious changes are conclusive proof of the vital changes, and indeed the only proof of existence itself,—Hence the Cartesian proposition, "*Cogito, ergo sum.*" But as no man is ever conscious till he lives, and as life precedes thought, we can reverse the proposition, and say with

greater truth, "*Sum, ergo cogito.*" Both conclusions rest alike on the testimony of consciousness—which is itself nothing more than our experience of the vital changes appropriate to consciousness. When a man is writhing we infer that he suffers pain; when he tells us he is perplexed, as in these metaphysical arguments he may well be, we have no doubt of the truth of his statement. In either case we infer that those vital changes, whatever they may be, are occurring in his brain, which coincide with the feeling of pain or perplexity.

[It is meant as a reproach when it is stated that views like these are materialistic, and that the man holding them is an atheist. This is, however, a confusion of ideas; for I consider that any man may hold the opinion that mental and moral phenomena, that what are termed will, and consciousness, and mind, and all our thoughts, are, as Huxley states, the expression of molecular changes in that matter of life which is the source of our other vital phenomena. That life is the property of protoplasm, and that protoplasm owes its properties to the nature and disposition of its molecules. Therefore, all properties of organized beings are due to the physical properties of protoplasm. We may not be able to explain all the processes by which the motions, the groupings, and electrical discharges (if such there be) of these molecules, pass into their corresponding states of thought and feeling, or how these physical processes are connected with the fact of consciousness, but neither can we explain, so as to follow all the processes, how physical conditions are renewed in the material animal, for instance, how worn out material is replaced by new. We content ourselves by stating that the useless is absorbed, and the new deposited, and we know this to be a fact that cannot be disputed. It

is therefore no reproach to our knowledge, not yet complete, that we cannot explain all the processes of the connection between mind and matter. In both these cases they are the result of the fiat of the Great Creator, and a man is not an atheist because he believes that the phenomena of mind are due to the laws God has impressed on matter.

It seems to me that he is so termed because he selects one of the two most probable views of the mode by which the Creator rules His works. As some philosopher has said,—God may be considered as ruling Creation by an interposing or by a predisposing volition. The first is the method held by those who consider their views are so correct that they are entitled to anathematize those who prefer to hold the other. As if it were more dignified to consider the Deity interposing in every petty transaction throughout Creation, (as it were, picking up straws here and laying them down there,) rather than to view Him as predisposing and leaving to the operation of grand and unerring laws, the whole course of Creation and its creatures, their developments, and their actions, and their thoughts, from the period of the initiation of all things to their final consummation.

Under this view it is right to consider that matter and intellect have co-ordinately developed during the ages that have passed, and are still in the process of development. Moreover, this view by no means interferes with any view of future life, or spiritual association with matter, that any may please to entertain; nor does it prevent any responsibility for good or evil actions. It rather throws on those who look on mind or soul (for in speaking of these they couple them invariably) as an interloping spiritual function attached to man, but not of him, the onus of proving how it can be that man alone is favored with the offer of future life,

and responsibility for the use of his morals or his intellect, when many other animals to whom this favor of soul and futurity is denied, possess thought, memory, regret, love, hatred, revenge and forgiveness, can steal or abstain, do ill or well, and can communicate their ideas and wishes to their fellows and to man, differ, in short, not in kind but only in degree from man. It is for those who maintain the different nature of mental manifestations in man and animals to account for these things, and it is not sufficient to attribute to man a spiritual possession, of which we have no evidence, and which is not necessary for future life so long as the resurrection of the body remains a truthful and essential article of Christian belief. Without it, it is in the power of the Creator to add future life to him, if He is so disposed, and I believe it will be so.

The following argument is used against the cerebral origin of mind: "That it is absurd to suppose that, as every atom in the human frame is being constantly changed, each molecule leaves the mental impression it receives, as a legacy to the succeeding molecule." But why is it absurd? Is it more so, that each molecule which replaces the departing molecule of a scar inflicted by a chisel in childhood, perpetuates the impressions of that scar, instead of replacing it by a sound molecule of new substance corresponding to the neighboring flesh? If the one molecule perpetuates its impression, why not the other? Does not this perpetuation correspond with other known facts? Why are hereditary habits and diseases dormant for years, if it be not that successive molecules retain their impressions from conception to the maturity of the disease or habit? Can hereditary insanity be explained by the spiritual theory of mind? That, on rational theory, the produce of diseased brain must be diseased mind, seems clear enough. But how

diseased brain can give rise to diseased spirit or soul is past comprehension. Yet on the accessory spiritual theory it must.

Even the moral sense is the result of education and hereditary transmission, and its monitions are altogether dependent on its training. Australian savages have a moral sense in many points the direct reverse of ours. They believe it right to take life for life, and their sense of rectitude is outraged if they do not. When I lived in Western Australia for some years, and acted as a magistrate, the native, who was the original and rightful proprietor of my farm, lost one of his wives from disease. He came to me and told me he was going to a distant tribe to spear a woman, to satisfy his sense of duty to his wife. I told him that if he did I would send him to prison for life. He remained about the farm for some months, but got exceedingly thin, and complained that he could not rest nor eat, that his wife's spirit was haunting him because he had not taken a life for hers. I was inexorable, and assured him that nothing should save him if he did. After a time he disappeared, and I saw no more of him for more than a year. He returned in high condition, and his other wife said that he had taken the life of a woman belonging to a distant tribe. No legal evidence could be had. Here is a perverted moral sense, as strong a sense of right in the savage in its operation, and more influential than the sense of right in civilized man. What are morals and conscience but the results of education through many generations, trained by exercise to sensitiveness, and possessing, from constant use a prompt, and facile, and decisive operation, becoming inoperative when not exercised, hardened as theologians tell us. But how a God-like and spiritual monitor, placed within man to guide and warn him, can be

hardened, or why it should become most useless when most needed, is one of those puzzles we owe to theologians, who for so many centuries have exercised such pernicious control over human thought.

These reasons seem to me, with many others, sufficient to entitle us to differ in thought from those who do not entertain them, and yet not to be far from the same result. It seems to me that men may fairly entertain these views of the connection of matter with morals and intellect, and yet be as devoutly alive to the laws of the Great Creator, as full of wonder, and worship, and reverence, and hope, as those who unthinkingly stigmatize them as atheists, or revile them in slang theological terms (in this age of the world best consigned to oblivion) as unbelievers in God. These are my opinions, and I repudiate with indignation the imputation of atheism, or irreligion, or no christianity, as a reproach resulting from the ignorance of those who use it, and undeserved by one to whom this mode of the contemplation of God's laws opens an ever widening view of His greatness, and power, and goodness.

Have those who entertain these opinions given any evidence of being worse Christians than those who malign them? Have they ceased to produce the living fruits of love, and charity, and zeal for truth? Was it for correct speculative opinions, or for pure, and moral, and benevolent actions that Christ separated the good from the bad in His picture of the Judgment? Did he condemn those to pass from his presence (not having ever known them) who had wrong views of baptism, or original sin, or because they did not visit the suffering in prisons and nurse the sick, or clothe the naked, or feed the hungry?

“If it be true Christianity to dive with passionate charity into the darkest recesses of misery and vice, to

irrigate every quarter of the earth with the fertilizing stream of an almost boundless benevolence, and to include all the sections of humanity in the circle of an intense and efficacious sympathy; if it be true Christianity to destroy or weaken the barriers which have separated class from class, and nation from nation; if it be true Christianity to cultivate a love of truth for its own sake, a spirit of candor and tolerance, then never since the apostles has Christianity been so vigorous as at present, nor practiced more earnestly than by those called rationalists, and the decline of dogmatic systems and of clerical influence has been the cause of its advance." And their destruction will be the era of its perfection.]

Now these and many others are the proof of the accuracy of the medical doctrine of the somatic nature of mental diseases and defects. But a late Lord Chancellor of England, (Lord Chelmsford,) great lawyer as he is, observed that if there were any process by which the skull of a lunatic could be cut into, and the changes here asserted to take place could be observed, there might be something in the medical notion of insanity; but medical notions had not attained that pitch of development, and medical men imagined external things to be the indices of things unseen. They therefore made issues hardly less important than life and death, depend on mere uncertainty. Now, nothing can be more inconclusive than this argument. The fact is that a dyspepsia is determined by the same kind of evidence and reasoning as insanity. All morbid changes in the body considered as ultimate phenomena are unseen, so that if we ascertain the structure of the minutest fibril and lay it bare in the living man in all its details, we must still accept external things as the indices of things unseen. The subtle forces acting in the brain are only

determined ultimately as they influence the consciousness in ourselves, or as they cause those changes in the body or its movements which are the indices of changes in the consciousness of others. We might as well look for the electric fluid which carries the expression of our thoughts along the wire. No other evidence is possible, even in the most ordinary cases of this kind. If the police find a man uproarious, reeling about and smelling of whisky, they conclude he has been drinking; and if policemen reason at all, they will conclude that the drink went down his mouth into his stomach, and from his stomach into his lungs and brain, where it is doing its poisonous work, and making him temporarily insane. Thus the police will conclude that external things, that is, the drunkenness, are the indices of things unseen, that is, the whisky. The Chancellor added that he was about to attempt to legislate so as to discover where the abuses and causes of error lay, which made such cases as Windham's generally odious, and the examination by mad doctors little better than a farce.

Windham's case is well known. He was a young man who succeeded to a large property, which he dissipated in all kinds of vice in a few years, and his next relative tried to have him made a ward in Chancery, and put on an allowance for life, in order to save the remnant of the property. The usual hard swearing concerning his sanity took place in court, and one doctor was pitted against another, until more than the usual amount of disagreement was elicited, and far more than the usual amount of disgrace and contempt fell upon the profession. And all this because the man was tried on a false issue. It ought to have been no question whether the acts of the man were consistent or not with perfect sanity, as judged by his knowledge

of right or wrong, or by his power to do certain sums in arithmetic or whether he knew the amount of his income, and the power of his property to bear his extravagance. Instead of limiting the inquiry to the time during which he had been vicious and dissipated, the inquiry ought to have extended into a comparison of his mind with itself during his past life. But this was deliberately rejected by the Judge, who would not allow the evidence of the witness who deposed that he had known Windham since he was four years old, and that he was congenitally deficient; the Judge said it was not sufficient in law to prove idiocy or imbecility, he must be proved to be mentally unsound when he committed certain actions, or he must be acquitted. Clearly in such a case the point to be proved should be the incapacity, not whether he was unsound in the legal sense as to delusion, etc., but whether he was congenitally or subsequently deficient, so as to incapacitate him for self-guidance. The point on which he was tried was both false and foolish, false as a matter of science, and foolish as a matter of common sense. What could happen but what did happen? The mad doctors were stigmatized, and the whole inquiry was wrong and a grievous injury to the individual, and to his relatives, and all because the law makes no difference between mental disease and mental defects.

There is the case of Tyler, in the January number of the *JOURNAL OF INSANITY*, which is another case in point, and fortifies my position. Here also the evil arose from trying the case on an erroneous principle. The old man was brought before a jury to determine the unsoundness of his mind, but neither the medical experts nor the judge defined what they meant by the term. It is to be inferred, by the direction to the jury, that the usual legal dictum was considered unsound-

ness. The witnesses had this definition in their mind, though Dr. Gray wisely and truly says, that "every individual should be judged from his own stand-point," in other words the very doctrine I am advocating. It is most likely that the result in this case would have been the same, but the unseemly exhibition of antagonistic experts would have been avoided, if the jury had been directed to determine whether Tyler was competent to take care of his own property, not whether he was unsound in mind. It cannot be held that every one who has a crotchet in his head is incompetent to manage his affairs, though it might be maintained that he was not altogether sound in mind. Still less can it be held that a man like Tyler, who has incomprehensible notions about the book of Revelations, must be deprived of the control of his property; for if that is to be the test of soundness, more than half the clergy of this and every other protestant country are unfit to manage their glebes, and are as mad as King Lear. The comments of the writer of the article are in the main true, and they help to demonstrate the necessity of altering the law, so that judges may put the right issues before juries, if juries are competent to try such cases.

There is an article on "the value of Expert Testimony," well worthy of attentive perusal, in No. 1, Vol. 28, of the JOURNAL OF INSANITY. The writer says that the issue to be tried in the case he is commenting on, ought to be this:—"Whether a man who for thirty years had shown all those traits of character which belong to imbecility, and shown no other, was competent to take personal charge of a large estate." In this case justice was defeated through the incompetence of the jury, the combativeness of experts, and the deficiency of law.

The tenacity with which lawyers hold to their opinions and practice, in the face of facts, is very remarka-

ble. Daily experience shows abundantly that a man or woman may be imbecile morally, from cerebral disorder and disease, and yet have great intellectual or even high logical powers. There are many who being thus diseased mentally, drink to drunkenness, are lascivious, lie, steal, are obscene, homicidal and malicious, in spite of a knowledge of right and wrong, and even with reasoning powers little or at all affected, and whatever the law may decide, the inexorable logic of facts will hold its own. It is in vain to say that if you treat every persistent drunkard and imbecile knave as irresponsible, you must convert prisons and jails into asylums. It is in vain to express fear that if these doctrines are admitted social foundations will be shaken. Has it yet been tried whether asylums would not be more effectual for cure and reformation than prisons? How many institutions are there in the world like the House of Correction in Detroit, and how many able Christian philanthropists capable of conducting such institutions like Captain Brockway? When these are found, and in operation, and unsuccessful, it will be time enough to lament over the conversion of gaols into asylums. In spite of such views, truth is truth, and I take leave to say that until this matter is inquired into by all legislators, and made available to reformation or restraint rather than punishment, the present inefficient routine will be followed with the criminal population, which is alike contrary to common sense and to Christianity. The question is one in which common sense and medical science are in perfect accord. It may be laid down as a first principle, that the capacity of an individual to be influenced by the motives which influence the average of mankind in health and soundness, is the measure of his responsibility to society and of society to him. He may be a mere child in moral development, as well as

in judgment (no doubt both defects of cerebral structure,) and when this is proved, the plea of irresponsibility to society is admitted, and society becomes responsible to him and for him, and keeps him out of harm's way. In like manner the cases of emotional, impulsive and vicious imbeciles should be treated, the incapability of self-control being the practical question to be tried, and not the amount of knowledge. In the insane the like principle ought to guide, and it is to be solved jointly by common sense and medical experience. If found incapable he has appointed guardians or curators, as was done by the old Roman law, until he is restored "*ad sanos mores.*" The same principle applies to criminal as to vicious imbeciles, which constitute the chief part of the incorrigible of the population. They are held in law to be entitled to uncontrolled freedom, when not convicted of offenses against the law, and thus they become mischievous to society. Practically, under the influence of the system of control, detention and cure would be still the fate of the criminal, but mercy and cure, not terror and repression, would be the aim and the result of its operation.

To accomplish this, there must be alteration of the law, so as to permit other issues to be tried than delusion or hallucination, or knowledge of right and wrong.

The appointment of a competent physician for states or districts, to assist the Judges in all cases of disordered mind, would be desirable. All the scandalous scenes of opposing doctors would be avoided by the appointment of a competent man to help the Judge to decide these cases. The principle that a man is insane or not, as compared with his past state, not according to the fancies of twelve ignorant jurymen, would then have its due weight. The standard, as I have said, is the comparison of the mind with itself at different

periods of life. The law as it now stands violates well known physiological principles, and should be amended, not in the spirit of Lord Chelmsford, by setting those principles at defiance, but in obedience to them, if it seeks to merit a reputation for truth and equity. Law has been said to be the embodiment in a code, of truth and justice. The sooner it merits this definition the better for its fame, for its condition now is intolerably disgraceful to the present state of knowledge. It ought not to be endured that the Courts of Law and the Schools of Medicine should be at issue on the fundamental question, whether insanity be a disease or not. As medicine is on this point far in advance of law, and to it is due the rescue of the insane from that state of degradation to which only a few years since they were subjected, its principles cannot be reversed by bending them to the retrograde action of the law, for that would be a stoppage of all progress. The profession must stand firmly on the only ground it can occupy,—That law must yield to medicine, and bring its rules into agreement with the state of modern science.

Insanity and its Treatment. Lectures on the Treatment, Medical and Legal, of Insane Patients. By G. FIELDING BLANDFORD, M. D., Oxon, &c., &c. Edinburgh and Philadelphia. 1871.

In the preface to his book the author states that the lectures, in an abridged form, were delivered at the school of St. George's Hospital, and are now published as a text book for students, as few works of that character exist in our language. He further states, that as the lectures were "written for students, they make no claim to a complete treatise on psychology; neither have all questions connected with insanity been dis-

cussed in them, such as the management of asylums and the problem of disposing of the crowds of our chronic insane."

In this treatise Dr. Blandford, in common with all the best modern authorities, strongly maintains and ably sets forth the physical causes of insanity, and shows clearly that such are largely predominant. In the preface already quoted he says, "I am convinced that the only method by which we shall attain an insight into the mysterious phenomena of unsound mind, is to keep ever before us the fact, that disorder of the mind means disorder of the brain, and that the latter is an organ liable to disease and disturbance, like other organs of the body, to be investigated by the same methods, and subject to the same laws;" a position held for years by this JOURNAL. The Doctor also, in common with the best modern observers, ignores all special manias; and all special manifestations, moral or intellectual, are regarded as the natural outgrowth of some physical entity, at times no doubt so obscure as to escape detection in the present state of our knowledge, but nevertheless existent. Dr. Blandford is also a firm believer in the curability of many of those diseases of which mental disturbance is the most prominent feature or symptom. In his classification, only four out of the twenty-four forms, based on the causes of the disease, are spoken of as at present absolutely incurable, viz: General Paralysis, Epileptic Insanity, Senile Insanity, and Paralytic Insanity (Phila. Edition, page 126.)

Notwithstanding the modesty of the claims set up by our author in his preface, we doubt if any treatise which has appeared of late will be found more satisfactory, even to the professed alienist, than Dr. Blandford's book; and we are quite certain that none can be more

highly commended as a text book to the student of psychology, or those outside the medical profession, to whom a knowledge of the subjects discussed is sometimes necessary.

The work is not only concise, but clear and comprehensive; and while it avoids as much as possible all metaphysical discussion on doubtful points in psychology and mental and moral phenomena, it brings down our knowledge of these obscure subjects as far as the latest advances made.

The book consists of twenty lectures, and we here proceed to give as full an analysis of each as our space will permit.

Lecture 1st treats of the organs of the mind, showing that insanity should necessarily be studied as a branch of medicine, because it is essentially a disorder of the brain, the nerve centres and cells. In this lecture the cell structure, nerve fibres, and their distribution, the blood supply of the brain, the nerve functions, and the methods of study as applicable to them, are fully and clearly discussed. Theoretical discussion is assigned a secondary place; and the practical observation of the operations of the insane mind as compared with the sane condition, is insisted on as preëminently important. "People can not comprehend," says he, "how an insane patient can do this or say that, because they judge of his disturbed feelings by their own, and if he does or says certain things as they would do or say them, they argue that his mind must be in all respects similar to their own." The truth of this is daily illustrated in all large hospitals, by the visits of friends who, if the patient recognizes them, or makes a few reasonable enquiries about home or family, at once jump to the conclusion that he is quite recovered, though still animated, perhaps, by the most dangerous concealed delusions.

Lecture 2d treats of the phenomena of mind, and the author traces the mental progress from the infant born without ideas or knowledge, up to the comparatively perfect development of adult life. The three divisions of the mind, made by some modern writers into intellect, emotion, and will, and the designation of certain portions of the brain as subservient to these, and the doctrine that each portion may be separately and distinctly affected without involving the others, is not recognized by the author; but the separate existence of these faculties is looked upon as "more apparent than real;" therefore it follows as a natural consequence that the separation of moral from intellectual manias, is not admissible, as maintained for years in this JOURNAL. "Volitional insanity," says the author, must imply an insane reason, not only an insane will, and is no more a separate and special form than are intellectual and emotional insanity, which are supposed severally to represent an insane intellect and insane emotions. "We can no more divorce intellect and emotion, than we can divorce intellect and ideas from consciousness." He discards the will as a third component of the mind, and retains only feelings and ideas, which in truth are not two but one, as they arise from present stimulation, are stored away in memory, and in new combinations come again into consciousness upon fresh excitation. In this lecture the author also discusses the conditions necessary for the right operations of the mind; such as a healthy flow of blood through the brain, food, upon which healthy blood is so largely dependent, normal temperature, light and sleep; and shows that when the mind is disturbed, we must find the defective spot in one or other of these parts, and to it direct such remedial means as science and experience suggest.

In Lecture III. on the pathology of insanity, the author makes some sound remarks on the concomitant disturbance of the sexual organs in this disease. These remarks are so confirmatory of the views expressed years since in the pages of this JOURNAL* that we quote them, more especially as the views expressed by Dr. Kellogg in the paper referred to in the note below, have recently been called up by Dr. H. R. Storer and his gynæcological disciples, and so perverted as to lead to the belief that our correspondent would place the first link in the chain of causation almost invariably in the generative-system.

“There are various disorders known as nymphomanie, satyriasis, hysterical mania, and the like, which also point to a connection between insanity and the sexual organs. That such a connection exists needs no demonstration: everyday experience shows it, but shows that these organs are affected from the head downwards quite as often as the reverse, *e. g.*, the sight or smell of the female excites the male, and the male organs hitherto quiescent. And when we see violent sexual excitement in the insane, we must not always assume that the origin is in the sexual organs, for I am convinced that it may be propagated from the excited brain to them. Here we must search through the analogies of other diseases and the teachings of pathology in general, and not be led away by a nomenclature into a rash conclusion drawn from phenomena which but too readily present themselves. It is extremely common to find in recent cases of insanity, where the patient is debilitated and out of health, that the catamenia are altogether absent, and the cessation accordingly is returned as the ‘cause’ of the in-

* See Dr. A. O. Kellogg's paper on “Reciprocal Influence,” &c., JOURNAL OF INSANITY, Vol. XII., April, 1856.

sanity. When the patient is recovering and bodily and mental health returning, the catamenia reappear, and are said to have 'cured' the brain disorder. But the absence of the function is quite as likely to be the concomitant as the cause of the mental symptoms, and we may be drawn away from the true pathology by fixing our attention too much upon it."

"If we look at the general constitution and the former history of any one of these patients, what do we learn? That she has always been, what is popularly called, nervous or hysterical, prone to emotional display, to bursts of temper, to hysterical crying, exaggerated, it may be, at the menstrual period. Most likely other members of the family are nervous, possibly some are insane. Thus is the old story repeated—hereditary predisposition to nervous disorder, a proneness to be upset by trifling occurrences, an unstable cerebral condition, greatly influenced by systematic disturbance of the sexual organs and functions, and reacting in turn upon, and violently exciting them. At first, all these disturbances are for the most part temporary, very variable, perhaps periodical; later, they become fixed and incurable."

The above we can confirm by frequent examinations, made during many years' experience in the care of insane women.

In this lecture the author also considers other potent causes of insanity, such as, exposures to heat, the abuse of alcoholic beverages, and narcotic poison, the insanity from blows, the insanity which arises after long continued anxiety, from mental shock, and the overtaking of the mental organism by excessive brain labor. The cases of sudden "taking off" of men eminent in every profession and occupation, demanding constant mental stress, which we find so frequently recorded in the col-

umns of the daily press, and the cases for which we are daily consulted, where this sudden "taking off" hangs like the sword of Damocles over the brain-weary subject, would lead us to dwell much longer on this than our space permits. The following remarks however are so pertinent to this class of cases that we can not forego their transcription here.

"I now come to a second pathological condition, where not a sudden mental shock, but a long-continued mental worry or anxiety, or long and laborious mental application and work has overset the reason. We see the result of this very frequently in brain diseases other than insanity, in so-called softening and disorganization of structure, produced by years of over-work. Here the machine gradually wears out; but in another, whose brain function is more liable to disturbance, there may be at an earlier period, signs of disorder rather than decay. The carking cares of poverty, and lack of means to support a family; the chronic torment of a bad husband or wife, or of prodigal sons or profligate daughters; constant harrass and anxiety in business of a speculative character, or a perpetual craving ambition perpetually disappointed,—these, and a thousand other miseries of human life, are the things which upset reason and fill asylums. And what is the pathology here? We do not hear of a sudden mental shock causing an overwhelming emotional excitement, and bringing about almost at once sleeplessness and acute insanity; but we know there must have been a constant stimulation of the brain, with increased motion and increased expenditure going on for years. The brain circulation during all this time has been disturbed, and the nerve centres exposed to a greater demand and a greater amount of change than they are able to bear. Some may endure this, may work early and late, and retain their faculties

unharméd; but others, who are by nature more prone to change, who easily display emotional excitement, and do not easily subside into their normal calm, are one day excited beyond recovery, and insanity is manifested. Owing to the length of time that the stimulation has existed, and the consequent weakening and exhaustion which the whole of the machinery must have undergone, we find that this form of insanity does not usually subside rapidly, and too often see along with it signs of irremediable disorganization of the brain or the nutrient blood vessels."

The occurrence of insanity in connection with other diseases, such as those of the liver, heart, kidneys and stomach, and also its connections with tuberculosis and syphilis, is fully discussed in lecture IV, on the pathology of insanity.

In the lecture on the morbid appearances in insanity, (Lect. V,) the Doctor expresses, we think, more doubt as to the good which has hitherto resulted from pathological investigations than we should be willing to admit, even in view of what he has himself brought forward from the labors of others. Of course there will be differences of opinion among observers, touching the morbid appearances found, and their influence on the morbid mental phenomena. He is, however, very hopeful as to the future, now that there have been so many advances made in minute anatomy, by which we have been enabled to ascertain, in a much higher degree of perfection, not only the normal but abnormal condition of the organ chiefly concerned in the mental operations.

We quote the following passage, as it coincides with the methods of investigation proposed by Dr. Gray, and carried out by the special pathologist of the N. Y. S. Lunatic Asylum, Dr. E. R. Hun, with a promise of important ultimate results.

“But even now, after so much has been done, we are but at the threshold of this great field of research. I believe that any one who patiently and skillfully examines the brain of the insane, not of ten or twenty, but of many hundreds, will throw an entirely new light upon mind pathology and brain pathology. No brain has been satisfactorily examined that has only been looked at with the naked eye. And all the records of former autopsies made in this fashion are as so much waste paper. Morbid phenomena, studied by the aid of the microscope, reveal themselves as definite changes and lesions, instead of indefinite ‘softening,’ ‘hardening,’ ‘thickening,’ ‘discoloration,’ such as are enumerated by naked eye observers; and no brain can be said to be properly examined that has not been examined throughout. Not every cell and nerve-tube need pass over the field of the microscope, but parts of every region and district are to be submitted to scrutiny—not only those obviously changed, but others also at a distance.”

The Doctor glances at the various classifications of insanity brought forward from the time of Arnold, (1782,) down to that of the committee of the Psychological Association, 1869, and that of Dr. Skae, modified by Dr. Batty Tuke. This last attempt is no more satisfactory than those hitherto made.

In Lecture VI. Dr. Blandford discusses the causes of insanity, and among these, hereditary tendency to the disease occupies a prominent place, as was to be expected. Age, sex, and the conditions of life are also dwelt upon, and reference is also made to statistics, prognosis, and the question if insanity be on the increase. Moral and physical causes are also glanced at. With regard to moral causes being more frequent than physical, we are inclined to disagree with the author.

In order that sudden moral causes be productive, there must first be a predisposing physical condition. To bring about this by moral means, time is required; in each the preëxistent physical condition is required before the mental manifestations are observed.

Lecture VII. is on the false beliefs of the insane, and the terms Delusion, Hallucination and Illusions are defined in the ordinary manner.

“A delusion,” says he, “is a false belief in some fact which, generally speaking, personally concerns the patient, of the falsity of which he cannot be persuaded, either by his own knowledge and experience, by the evidence of his senses, or by the demonstrations or declarations of others.” Had he added that all this is the result of disease occult or demonstrable, his definition of an insane delusion would have been complete. The delusions of the insane are frequently false interpretations of real feelings and sensations, though morbid, which occur in various parts of the system, and which the patient, from the enfeebled condition of the brain, cannot comprehend. Sometimes these false sensations which give rise to delusions, and which puzzle the physicians during the lifetime of the patient, are fully explained by post mortem examination.

Quite recently a case of melancholia has been under the care of the writer, in which the patient refused food so persistently, that she had to be nourished for days with the tube. She maintained that her stomach was turned wrong side out, and that the food did not reach its destination. She said she could feel the process by which the stomach was reversed, whenever any food was put in it. After death, in addition to chronic disease of the organ, a large lumbricoid was found in its cavity.

The remarks of the author on the acts of homicidal

lunatics (page 147, Edinburgh Edition) are of much interest and deserve careful perusal. Some, under the idea that great evil is to happen to them, seek every means to flee from the danger, and will even set the house on fire, as we have known in repeated instances, and make violent attacks on those about them. Many homicides by lunatics are done in fear. Some think that wicked men are conspiring to do them a great injury or compass their ruin. Murders are committed by those who imagine that their victims have accused them of great crimes. As regards the prognosis in such cases, where the delusions have existed for a number of months, and all evidences of acute disorder have subsided, we agree with Dr. Blandford that it is bad, and that the patients are likely to continue insane; and, if not dangerous through the remainder of life, they will require careful supervision till they become harmless from dementia, the most common result.

The author dwells further on homicidal propensities in Lecture VIII. on the acts of the insane. Speaking of homicide by epileptics, he says: "An act of murder may be committed by an epileptic in the furious mania with hallucinations and delusions, which follows a fit or succession of fits. It may also be done in a period preceding a fit; a period during which especially such patients show strangeness of manner and mind. The convulsion may be expended as it were in the act of violence, the fit not occurring as it otherwise would have done." The author gives illustrative cases, and many now occur to us, to show how cautious should be the judicial dealings with these most embarrassing cases, homicidal epileptics. He also, in this lecture, speaks of homicide from a desire to escape, from delusion, from idiotic or wanton mischief; he alludes to the so-called impulsive homicide, pyromania, erotomania,

and kleptomania, without regarding them as special forms of disease. He also speaks of fantastic dress, eating and drinking, habitual drunkenness, suicides, self-mutilation, indecent exposure, and the squandering of property, in this lecture on the acts of the insane.

Lectures IX., X., XI., and XII. are devoted to the several forms of acute insanity, their symptomatic phenomena, cause, and treatment; and the author suggests that there are two forms between which all the others can be arranged. At one extremity of the list he places acute delirium, acute or delirious mania, which runs its course rapidly, or in a few weeks, and terminates in amelioration or death. In this form we have entire sleeplessness, incessant brain action, powerful and exhaustive physical exertion, rapid evolution of heat, quick pulse, speedy emaciation, brown coated tongue, etc., all which symptoms, if they do not cease within a short time, must lead to exhaustion and death. This is the form which calls for prompt medical treatment, and the one in which early treatment will accomplish most favorable results—not only by warding off death, but by preventing those physical changes on which permanent mental impairment depends. At the other end of the list he places what has been called acute primary dementia. Here he wishes to employ the term acute in the sense of *recent* and not chronic. Here, instead of an excess, we have a defect of action and oxydation, which may be briefly described as follows: “The skin is cold, the hands and feet are blue with cold, even in hot water, the patient sits motionless, answers no questions, does not appear to understand them, seems lost, looks idiotic, sometimes almost comatose; the pulse is weak and slow, the tongue pale and moist; food is taken passively, and sleep is not absent. Without a history, he says, we might find it diffi-

cult to make a diagnosis between this condition and the dementia which is the result of long standing insanity, old age, or brain disease.

“We shall unquestionably,” continues the author, “meet with cases that some would call melancholic, while others will think that they ought rather to be termed maniacal—cases that one person will call acute delirium, another acute mania. There will be such on the border-land of all diseases, cases of rheumatism that can hardly be called acute—cases which one may term rheumatism, another gout; others which one calls typhus, another typhoid. In the same way we may use the terms mania, melancholia and dementia.”

The author then proceeds to speak of the early symptoms of insanity, and calls especial attention to those alterations of character which so frequently precede the full development of the disease. After some general remarks of a highly-practical character on treatment, change of scene, food, medicines, etc., he proceeds to speak of insanity with depression, melancholia with its attendant delusions, and suicidal tendencies. In the treatment of sleeplessness, attendant upon this form of disease, the Doctor bears his testimony to the great value of the hyd. of chloral, the experience with which in the New York State Lunatic Asylum is so fully set forth in the paper by Dr. Andrews, in this number of the *JOURNAL*. Chloral, the author remarks, is simply a sleep compelling agent, and does not, like opium, have any special healing influence.

The preparation of opium, which has succeeded best in the author's hands, is the liquor morphiæ bimeconatis as it causes neither sickness nor constipation.

Speaking of dyspepsia in connection with melancholia, he says that all the symptoms are the result and not the cause of the depressed nervous condition, a view main-

tained by the late Dr. Brigham more than twenty years since, in his book on "Mental Excitement, &c.," and also by Dr. Kellogg in the pages of this JOURNAL. The assertion that the constipation so frequent in melancholia, can, after the colon has been unloaded by enemata, be remedied in most cases by the stimulus of an increased amount of food, is borne out by our experience. The allowance of food which we insist upon being taken, notwithstanding the dyspeptic symptoms, is sometimes a matter of astonishment to friends, and great concern to the patient, notwithstanding he improves rapidly under it. We can fully confirm all that is so well said by Dr. Blandford, in the matter of diet. For years, so important has an increased nutritious diet been considered in the Utica Asylum, that it has been spoken of as one of the "first principles of treatment." With us forced alimentation is always resorted to, if a melancholic patient has refused food for twenty-four hours; and tube feeding, œsophagaél or nasal, is with us a matter of daily occurrence.

The process of injecting food into the stomach by a pump, either when the œsophagaél or nasal tube is used, as spoken of by Dr. B., and as practiced by some, is quite uncalled for. After the tube is introduced, a funnel, made to fit accurately, is placed in it, and the fluid nutriment, milk, milk punch, egg-nog, or beef essence, as may be determined upon, is poured into the funnel from a common pitcher, and, by the simple force of gravity, finds its way into the stomach as rapidly as it could be ordinarily swallowed. When the nasal tube is used, which must of necessity be smaller, the process of filling the stomach is not as rapid, but in either case it can be done effectually; and by an experienced hand without any possible injury. In the hundreds of instances in which both methods have been resorted to at the

Utica Asylum, no accident or injury has ever resulted. We have had to feed patients in this way daily, in several instances, from one to three months, with occasional feeding for a much longer period: and in spite of such struggles against life, they have been made to live, recover, and in *some instances*, be grateful.

From the following passage in relation to the prevention of struggling in feeding patients, we are inclined to think that Dr. Blandford is not so much opposed to mechanical restraint in certain cases, as some of our British brethren; though from the cautious manner in which he words the paragraph quoted below, it would seem that even he stands a little in awe of those all-potent "Commissioners of Lunacy," a maudlin public sentiment in regard to mechanical restraint, the *Journal of Mental Science*, and perhaps the ghost of the revered, though not always wise, Dr. Conolly.

"Doubtless," says he, "some will talk about mechanical restraint, and so forth; to these I would say, compare a patient struggling for fifteen or thirty minutes in the hands of three or four attendants, with one fastened with sheets in a chair for five minutes. *Let both be seen before judgment is passed.*"

As regards the prognosis in cases of melancholia, we agree with the author that in most cases it is favorable, though some indeed are very protracted. Dr. Blandford speaks of the recovery of one case who for nearly five years did nothing but pace her room, ejaculating "My God;" "My God," and we can recall a number of this class nearly if not quite as prolonged.

Lectures XII., XIII. and XIV., on acute mania and general paralysis of the insane, set forth clearly the character of these forms of disease, and sum up most of our knowledge concerning them; but as they contain nothing new, nor add any special interest to what is already known, we pass them by.

The following extract from Lecture XV., on moral or emotional insanity, sets forth the author's ideas on this hitherto much vexed question, and shows that he is in strict accord with the best modern authorities, and with the doctrines advanced for years past in the pages of this JOURNAL.

"Now, I deny that the absence of the moral sense proves or constitutes insanity, any more than its presence proves sanity. It is perfectly true that it is absent in many lunatics, all notions of duty, propriety and decency being destroyed in the general overthrow of the mind; but it is also true that we can find perfectly sane people who, either from early education and habit—the habit of continued vice—and also hereditary transmission,—are devoid of moral sense to an equal or greater degree. Probably greater wickedness is daily perpetrated by sane than ever was committed by insane men and women; so that when immorality makes us question a man's state of mind, it must be remembered that insanity, if it exists, is to be demonstrated by other mental symptoms and concomitant facts and circumstances, and not by the act of wickedness alone. Writers who, like M. Despine, think that the committal of great crimes without concern or remorse, indicates an absence of the "moral sense," amounting to irresponsible defect, overlook the fact that the habit of wrong doing may be acquired to such an extent that the thing done excites no feeling whatever.

"An habitual murderer, as a Thug or brigand, thinks no more of taking life than does any veteran soldier. The gradual effacing of the moral sense, and gradual hardening in vice, have been portrayed by many a moralist; but something else is needed to prove the disease or deficiency of mind we look for in inhabitants of an asylum.

"I cannot help thinking that the authors who have most strongly upheld the doctrine of a moral insanity and morbid perversion of the moral sentiments, have often underrated or neglected the intellectual defect or alteration observable in the patients. Because no delusion has been found, it has been assumed that the intellect is not impaired, intellectual insanity and insanity with delusions being spoken of as synonymous. But many patients of defective intelligence have no delusions; as all kinds of idiots and imbeciles. Many of altered intelligence have not as yet reached the stage of delusion, and may recover from the latter, or from the stage at which delusions are present, yet do not recover their full intellectual powers, but remain semi-cured and semi-insane. This class is a very large one."

The cases brought forward by Drs. Pritchard, Symonds, Hitch, Ray and others, as cases of moral insanity and monomania, the author shows to be descriptions of insane patients, and not varieties of insanity.

In Lecture XVI., the author shows that what is called impulsive insanity has no more claims to recognition as a distinct form of disease than has moral insanity. He shows that all insanity is more or less impulsive, and many cases are characterized by sudden acts of criminal violence. We consider that there is no more authority or necessity for introducing the term impulsive insanity, than there would be for screaming insanity, or jumping or tearing insanity. We even entertain doubts as to the entire fitness of the term homicidal insanity, since of the fifty-two cases referred to by Dr. Blandford, as reported by Dr. Gray, the homicide was only one of a number of concomitant symptoms, the offspring of delusions, and, in all, there was no doubt of the existence of insanity.

The last four lectures, on the treatment of insanity

and its termination, on dementia, feigned insanity, the laws of lunacy, etc., contain much that is of interest, if not strictly new; but as we have already taken up much space in the consideration of this valuable book, we merely allude to them in the hope that our readers will familiarize themselves with the volume itself, which we welcome as a useful contribution to the psychological literature of the day.

BIBLIOGRAPHICAL.

31. *Tenth Annual Report of the Alabama Insane Hospital:*
1870. DR. P. BRYCE.

There were at date of last Report 191 patients in the Hospital. Admitted since, 88. Total, 279. Discharged recovered, 17. Improved, 10. Died, 30. Total, 57. Remaining under treatment, 222.

In this report the Doctor devotes considerable space to the question, "Are Inebriates Insane?" and proposes the establishment of a "Reformatory for Inebriates." He was led to do this from a request of the State Medical Society of Alabama, for the reception of this class of patients into the Insane Hospital of the State. The proposition, although duly considered by the Trustees of the Hospital, was very properly reported upon adversely by them. In this report the ground for their action is stated in full. The demand for some means of care and treatment of inebriates which should promise a fair prospect of reclamation, has induced the Doctor to propose in general terms the following plan:

I should like to see established in Alabama a REFORMATORY FOR INEBRIATES, of all classes, under the jurisdiction of the civil courts. The facts might properly come before the grand jury, and upon the finding of a true bill the case should be duly investigated by a jury empaneled specially with a view to its competency to examine and decide the same. If the allegations are established by proof, the inebriate should be committed for a term of *not less than two, nor more than five years*, to the Reformatory; and be supported there at the expense of the State. The treatment should be conducted by an educated physician, under a board of intelligent trustees. A part of the moral treatment should consist in the regular performance of skilled manual labor, in which each patient should be compelled to engage, the proceeds of which should support the institution. Voluntary inebriates should be received, without the exposure of a public trial, on the same conditions as those sent by order of the courts, on certificate of a Justice of the Peace that the applicant is a volunteer, and that the term of treatment has been determined by two intelligent physicians. Inebriates who are willing and able to pay their expenses in the Reformatory should receive extra accommodations, and pursue, with the consent of the medical Superintendent, such literary, manual or other occupation, as their education, taste, and previous habits of life might indicate.

Thorough discipline would be indispensable to successful management, but it should not be unnecessarily harsh nor exacting; nor should the institution be allowed to degenerate, in any respect, into a mere punitive establishment. Only such requirements and restrictions as are absolutely necessary to compel each patient to follow a trade, to obey constituted authority, and to carry out the ordinary hygienic rules and regulations of such an establishment, should be imposed. The officers and nurses should be the best of their kind, and selected, as in hospitals for the insane, with a view to their fitness, intelligence, and capacity for the work.

In general terms, the qualifications for admission into this admirable institution should be the excessive, persistent, or regular periodical use of alcoholic stimulants, to the neglect of ordinary business and domestic obligations, the impairment of general health of mind or body, and the habitual failure to observe the proprieties of life at home or abroad.

Such is the general outline of a reformatory for inebriates, which I believe to be not only eminently practicable, but absolutely essential in the cure of a disease, of all others the most intractable

and ineradicable. Inebriate Asylums, upon the voluntary system alone, when the time of treatment is restricted to one year, however grand, imposing, and complete their appointments, must necessarily, from the very nature of the disease which they profess to treat, prove failures in the end. No self-imposed restraint can stay the victim in his onward course to destruction. Nothing but the strong arm of the law can reach his case. Time, likewise, is necessary to remove the cerebral impression upon which we have shown methomania to depend. Reforms, extending over one, two and even many years, followed by relapses, debauchery and death, are not unfamiliar to many of us, and lead us to condemn most emphatically any system of cure that does not extend over several years at least.

Apart from the direct curative results of such an institution as I have described, its moral effect upon the habitual drinker and the novice in restraining the habit within proper limits, or in tending to break it up before it becomes fixed; and upon the young, especially those who have inherited the tendency, can hardly be properly estimated. The danger of relapsing too, which we have shown to be so imminent even in those who have undergone treatment and are restored, will be materially lessened by the mere presence of so formidable an agent.

Dr. Bryce fully commits himself to a belief in the practicability of the plan, and replies affirmatively to the question, "Will it pay?"

He mentions in detail some of the applications he has received for the admission of cases of inebriety into the Hospital, and speaks of the high scale of prices adopted by Inebriate Asylums now in operation. We give the views of Dr. Bryce at some length, as this is a subject which is attracting considerable attention, and is commented upon in several of the reports of this year. A tabular statement of the operation of the Hospital for the ten years it has been in operation shows that there have been received 563 patients. Of this number, 144 have been discharged recovered, 39 improved, 23 eloped, and 135 have died.

There is one feature in the general discipline of the

house which we think peculiar to this institution. We refer to imposing a pecuniary fine for every violation of the Regulations, which is deducted monthly from the wages of the delinquents. During the last year the fines amounted to about \$500, or seven per cent. of the sum total paid for wages. The discharges and resignations in a corps numbering 45 have been 69. Still "applicants are generally in excess of vacancies, and as a rule, such apply as are attracted by the love of order and a desire to do their duty."

32. *Forty-Sixth Annual Report of the Eastern Kentucky Lunatic Asylum*: 1870. Dr. JOHN W. WHITNEY.

There were at date of last report 430 patients in the asylum. Admitted since, 248. Total, 678. Discharged recovered, 70. Removed, 23. Died, 60. Total, 153. Remaining under treatment, 525.

Dr. Whitney succeeded Dr. Chipley in the superintendency of the asylum, and now presents his first report. This is very brief and contains little besides the annual statistical matter.

33. *Report of the Western Kentucky Lunatic Asylum*: 1870. Dr. JAMES RODMAN.

There were at date of last report 301 patients in the asylum. Admitted since, 71. Total, 372. Discharged recovered, 27. Improved, 5. Eloped, 1. Died, 14. Total, 47. Remaining under treatment, 325.

The full capacity of the asylum has now been reached, and patients can only be received as vacancies occur by recoveries or death. A special report upon the subject of increased accommodations will be made to the legislature. The preference of Dr Rodman is given to the erection of a new asylum centrally located. Owing to the crowded state of the institution, two cottages

have been erected for the use of the most quiet and demented class of patients. Upon this subject the Dr. remarks :

“Necessity only has compelled their erection, and necessity only should force their multiplication. There are advantages, unquestionably, in providing for some insane persons in this manner; but the system, in any extended way, is subject to serious objections, such as the impossibility of exercising that constant, vigorous supervision required in a hospital for the insane; the want of economy in domestic service, heating, &c., and its inconvenience to the medical officers, beside the danger always incident to associated dormitories. Those that we have are the best of their kind, neatly and carefully built, and as substantially as frame-work is usually done.

The chapel approaches completion. A central kitchen for the whole asylum is now in successful operation. Improvements are contemplated which will add to the facilities for the exercise and amusement of the patients.

34. *Fifty-third Annual Report of the McLean Asylum for the Insane: 1870.* DR. JOHN E. TYLER.

There were at date of last report 184 patients in the asylum. Admitted since, 79. Total, 263. Discharged recovered, 33. Improved, 23. Unimproved, 17. Died, 12. Total, 85. Remaining under treatment, 178.

Since April last Dr Tyler has been incapacitated by illness from the performance of his ordinary duties, and the care of the institution has devolved upon the assistant physician, Dr. Whittemore; and “the progress of the asylum in its beneficent work has gone on without hesitation or hindrance.” A fund has been provided, the income of which will provide for the expense attending the amusement and entertainment of the patients.

The singing school and French classes referred to in the last report have been sustained during the greater part of the year. The classes in drawing have been continued, and frequent assemblages held.

35. *Eleventh Annual Report of the N. Y. State Lunatic Asylum for Insane Criminals: 1870.* Dr. JAMES W WILKIE.

There were at date of last report 79 patients in the asylum. Admitted since, 17. Total, 96. Discharged recovered, 9. Improved, 6. Unimproved, 16. Escaped, 2. Died, 3. Total, 36. Remaining under treatment, 60.

By a law of 1869, the asylum was converted into an asylum for the criminal insane, thereby extending the original design, without increasing its capacity. This has led to an overcrowding of the institution with a "dangerous class of lunatics." The capacity is limited to 64, while 88 patients have been, at times, under treatment. The enlargement of the institution is called for and seems to be demanded to enable the asylum to care properly for all who should be consigned to it. This institution has now been extended to its original and legitimate purpose, the cure of insane criminals as well as convicts. The managers of the State Asylum have long felt it to be wrong to the ordinary insane to associate them with these classes of dangerous lunatics. It is to be hoped that the recommendations of Drs. Wilkie and Gray, to enlarge the institution, will be promptly carried out. Repairs of building, necessitated by previous neglect, have been made to the extent of the funds appropriated for the purpose. A still larger amount will be required to complete the improvements contemplated.

Dr. Wilkie, by the energy already displayed, and the spirit with which he has entered upon his labor, gives promise of success and usefulness as a superintendent of the asylum under his charge.

36. *Annual Report of the Insane Department of the Philadelphia Almshouse: 1870.* Dr. D. D. RICHARDSON.

There were at date of last report 723 patients in the asylum. Admitted since, 416. Total, 1,139. Dis-

charged recovered, 147. Improved, 117. Unimproved, 14. Not insane, 5. Died, 101. Total, 384. Remaining under treatment, 755.

Of the number remaining, 496 are chronic cases, 107 are epileptics, 53 are imbecile, 16 are idiotic, and only 83 are acute cases.

37. *Second Annual Report of the Willard Asylum for the Insane: 1870.* DR. JOHN B. CHAPIN.

There were at date of last report 142 patients in the asylum. Admitted to December 1st, 1870, 167. Total, 309. Discharged recovered, 8. Improved, 2. Unimproved, 3. Died, 14. Total, 27. Remaining under treatment, 282.

Four died from chronic mental disease, 2 from old age and debility, 2 from apoplexy and cerebral effusion, 2 from phthisis pulmonalis, 1 from marasmus, 1 from epilepsy, 1 from paresis, and 1 from puerperal mania.

The buildings consist of the asylum proper in process of construction, and the agricultural college building one mile distant. The farm consists of 475 acres. No statement is made of the cost of the new building or of the remodeling of the old one, though the managers state the amount expended up to date of this report to be "not far from \$540,000," and ask for further appropriations toward the completion of the work. The cost of board is stated at "a trifle over \$3.00 per week per patient," and the last six months at \$2.75. The managers ask the legislature for a further appropriation toward the maintenance of patients, as they declare that the \$2.00 per week for board as provided by law will not prove sufficient. The appropriations made by the legislature at its last session for this institution were as follows:

For salaries of officers.....	\$8,000
For support and maintenance.....	20,000
For fuel.....	10,000
For printing, stationery and medical books.....	1,500
For contingencies to cover extraordinary purposes, lack of water, failure of crops, &c.....	3,500
For unsettled bills and interest.....	2,000
For water supply, enlarging reservoirs, and extraordinary expenditures.....	8,000
For roads, fences, buildings, trees, grading, &c..	7,000
Furnishing chapel.....	2,500
For ventilating buildings.....	2,000
For purchase of a dock.....	15,000
For improving and repairing dock.....	3,000
For portico and stairs of main building.....	5,000
For trustees to settle in full with foreman of labor on farms and buildings.....	1,000
For furniture.....	5,000
For brick and brick yards.....	3,667
For a group of detached buildings.....	40,000
For extension of north wing.....	65,000
Total.....	\$202,167

38. *Seventh Annual Report of the Superintendent of the West Virginia Hospital for the Insane: 1870.* Dr. R. H. HILL.

There were at date of last report 202 patients in the hospital. Admitted since, 42. Total, 244. Discharged recovered, 16. Improved, 4. Unimproved, 3. Died, 14. Total, 37. Remaining under treatment, 207.

In closing this annual report, Dr. Hill offers to the trustees his resignation as superintendent of the hospital, to take effect on the 1st of July, 1871.

The Doctor has spent fifteen years of his life in the care of the insane, and has now reached that period in life to which "he has long been looking as a suitable one to drop into retirement, or into less responsible and wearing duties."

Six years ago Dr. Hill opened the institution with nine patients, occupying the extreme southern one story

wing of the building. Other sections have been successively completed, and the centre building is now ready for occupancy. The number of patients has increased to over two hundred. The Doctor has met with success in his labors, and will carry into his retirement from his public and responsible duties, our good wishes for his future prosperity and happiness.

39. *Fifth Annual Report of the General Hospital for the Insane, State of Connecticut*: 1870. DR. A. MARVIN SHEW.

There were at date of last report 232 patients. Admitted since, 75. Total, 307. Discharged recovered, 20. Improved, 19. Stationary, 10. Died, 21. Total, 70. Remaining under treatment, 237.

The report of the Doctor is full and interesting. The statistical tables have been prepared in accordance with the plan recommended by the Association of Medical Superintendents of Institutions for the Insane. The demand for the admission of patients continues, and seventy-four applications are now on file. The completion of the building in accordance with the original plan is strongly urged, and the fact that the institutions of other states, which have hitherto received patients from Connecticut, have felt obliged to refuse admission to non-residents, furnishes another forcible argument in this direction. We are glad to note the fact that Dr. E. C. Sequin has been appointed special pathologist of the institution. He furnishes a full report of two autopsies made with great care, in which the brain and spinal cord were subjected to microscopic examination. We hope that investigations, thus inaugurated, will be continued till further light is shed upon the pathological changes of the nerve centres in cases of insanity.

40. *Sixteenth Annual Report of the Southern Ohio Lunatic Asylum*: 1870. Dr. RICHARD GUNDRY.

There were at the date of the last report 346 patients in the asylum. Admitted since, 407. Total, 753. Discharged recovered, 160. Improved, 29. Unimproved, 12. Transferred, 4. Died, 34. Total, 239. Remaining under treatment, 514.

In his remarks upon the statistical tables furnished in his report, Dr. Gundry has embodied much experience and information upon the various questions of interest regarding the disease, its causation, its form, and its prognosis. He has given, in a few pages, an epitome of the main points of the whole subject, which is at once valuable and interesting. We commend the perusal of it to our readers. Upon the name to be given to institutions designed for the treatment of insanity as a disease, he makes the following remarks:

As the buildings at Athens and Columbus approach completion, and the State will be divided into appropriate districts around them, I trust that opportunity will be taken to change the present names of the hospitals designed for the insane in this State. These buildings are built and consecrated to the relief of the saddest disease man is heir to, or where cure is not to be obtained, to its mitigation. Since, therefore, they serve the purpose of hospitals, why should not they be so called, with some qualification to show their locality and purpose. The word "Lunatic" embalms an old superstition long since exploded, that the influence of the moon was the cause of mental disease. The sufferers were "moon struck," in plain English, or "Lunatic" in Latinized phrase. Why should this barbarism be perpetuated, in the names of the buildings dedicated by Ohio to the benefit of her sorely afflicted children? Good taste, if no other consideration, would suggest that the term "lunatic asylum" be discarded, and Hospital for the Insane be substituted. This may seem a trivial matter, but it is not really so. Words are things, and influence our feelings and actions more than we suspect. When a word ceases to represent the truth of the matter it refers to, it becomes—as the eloquent South has it—a mere "imposter, and should, like all other imposters, be put aside."

41. *Twenty-Eighth Annual Report of the New York State Lunatic Asylum*: 1870. DR. JOHN P. GRAY.

There were at date of last report 603 patients in the asylum. Admitted since, 481. Total, 1,084. Discharged recovered, 153. Improved, 72. Unimproved, 134. Not insane, 7. Died, 75. Total, 441. Remaining under treatment, 643.

The managers of the asylum in their report recommended the passage of a general law empowering the managers of the various public charities of the State, in cases where an investigation into the truth or falsity of charges made against them is deemed advisable, to administer oaths and compel the attendance of witnesses. This request was favorably considered, and such a law is now among the statutes of the State. The report of the Superintendent is full and interesting, and will do much to enlighten the people upon the workings of the institution and dissipate the ignorance which exists in regard to the aims and difficulties experienced in the management of asylums for the insane. Much space is devoted to the post mortem examinations made through the year, and the record of deaths. Seventeen autopsies were made, of which there were thirteen careful microscopic examinations of the brain, and three of the spinal cord. The work of the special pathologist, Dr. E. R. Hun, has been continued in accordance with the plan laid down by Dr. Gray and previously announced in this JOURNAL. The first subject, examination of the secretions in all stages of the disease, was carried out in the examination, both microscopical and chemical, of the urine of more than 500 patients. We cannot give the results in this review, but would refer to the report itself. This work will be continued, and we think promises good results toward ascertaining the pathological state which exists in cases of insanity.

42. *Twentieth Annual Report of the New York Asylum for Idiots*: 1871. DR. H. B. WILBUR.

The number of pupils now in the asylum is 147. The Doctor presents a highly interesting report of the establishment and progress of institutions for the care and instruction of idiots, both in this country and in England. The latter he has visited and made himself familiar with during the past year. There is a constantly increasing demand for the reception of this unfortunate class into the asylum, which calls for more extended accommodations. Last year the proposition was made to appropriate the old college building upon the farm of the Willard Asylum for the Insane, at Ovid, for the reception of the custodial cases. This has already been occupied by the chronic insane; and an appropriation is asked to enlarge the State asylum located at Syracuse. The estimated cost of the extension is \$30,000. This will make accommodation, with the building already erected, for 250 pupils, at an average expense of \$527 per inmate.

43. *Twenty-third Annual Report of the Massachusetts School for Idiotic and Feeble-minded Youth*: 1870.

The number of inmates reported last year was 87: 26 have entered; 30 have been discharged; so that the present number is 83.

We quote from the report:

It seems probable that idiots are more numerous among the children of the rich and of the poor than of the middling class, who suffer neither the enervation of riches nor the pinchings of poverty. Many such children appear like abortions of nature, caused by inactive and luxurious, or of over-active and poorly-nourished lives of parents. Be this as it may, the pupils of our school come mainly from the actually poor. Many are of families that have been deteriorating physically; and are nearly run out. The stock has become vitiated by various causes; among which, intemperance, and physical excesses, are prominent.

The offspring are scrofulous and feeble; and grow more so in each successive generation. Their feebleness keeps them backward in the race of life. In spite of their struggles they tend toward poverty and want; and can barely keep out of the dependent class. When to such a family is born a child who, instead of a help, is to be a perpetual burden; instead of a blessing, is a calamity; the consequences are apt to be utter discouragement and final dependence. To such families the aid of the State comes timely; and comes in a form which is not humiliating, but, on the contrary, is grateful and encouraging. A child beloved by them, but loathed, or at least pitied by their neighbors; avoided by other children; shut out from the common school; kept away from church and Sabbath school; hidden from visitors; a constant care and sorrow to the mother; a source of anxious forethought to the father,—such a child is taken up by the strong arms of the State, and nourished, and trained and taught, so that its single, little talent may be developed to the utmost.

44. *Annual Report of the New York State Inebriate Asylum.*
1870. Dr. D. G. DODGE.

The institution has been under the charge of its present superintendent for the past eight months, and his report covers only that portion of the year. Great confidence is manifested in the amenability of inebriety to proper treatment, and supported by the assertion, given from statistics, that 63 per cent. of the patients in the past two and one-half years have been cured. Upon the subject that inebriety is a disease, the Doctor remarks:

We start to take the position that alcohol is a poison; in Toxicology it ranks among the leading poisons. All known poisons are valuable remedies, and many of them, when judiciously prescribed by the physician, are actually indispensable in the treatment of diseases; they become injurious and often fatal as poisons only when administered or voluntarily taken in immoderate doses. This is eminently true in regard to alcohol, which is oftentimes a valuable remedy, but, like other remedies, is liable to abuse; and when it is used immoderately, or, as we say, intemperately, it becomes an active poison, resulting immediately in functional dis-

order, and eventually in organic disease. All medical men of intelligence and experience, who have witnessed the effects of medical, temperate and intemperate, or excessive use of intoxicating drinks, unite in testifying that however valuable, skillfully administered or applied, alcohol may be in medical practice, in the sciences, and in the arts, outside of these it is a curse to the human race.

The most eminent authorities in the medical profession unanimously agree that the excessive use of alcoholic drinks acting directly on the different tissues of the system, together with the inevitable depraved condition of the blood, resulting from the same agent, will produce functional disorder, which may terminate in actual disease, involving organs important to life, such as the brain, liver, kidneys, stomach and bowels. With the use of alcohol in excess, functional disorder will invariably appear, and no organ will be more seriously affected, and possibly impaired, than the brain. This is shown in the inebriate by a weakened intellect, a general debility of the mental faculties, a partial or total loss of self-respect, and a departure of the power of self-command; all of which, acting in conjunction, place the victim at the mercy of a depraved and morbid appetite, and make him utterly powerless, by his own unaided efforts, to secure his recovery from the disease which is destroying him.

There were in May, 1870, 54 patients in the asylum. Admitted since, 135. Total, 189. There were discharged with great hope of permanent reformation, 91. Unimproved, 27. Total, 118. Remaining under treatment, 71.

45. *Seventh Annual Report of the Board of State Charities of Massachusetts.* 1871.

The report is large and full of information and statistics regarding the general management and operations in detail of the various charities of the State. The policy of the State in the care and treatment of its wards is distinctly stated; various plans and theories adopted in other States and countries are discussed, and a spirit of friendly criticism freely indulged. On the management of the numerous institutions, especial-

ly for the treatment of the insane, the Board find much to commend and nothing to censure. Of the impression which was produced by the last report, that the Board recommend the introduction of the family or farm system, as practiced at Gheel in Belgium, they say that "a reference to the report will show that the Board distinctly disclaimed any such purpose." Upon the same page, however, they make use of the following language:

Now the chief features of the Belgium system are these: First, treating the recent and curable cases of insanity in hospitals; second, sending the chronic and quiet patients (about one-fifth of the whole) to the colony at Gheel where they are boarded out among the peasantry, but still kept under strict supervision by the government.

The peasantry of Gheel and its neighborhood, whose ancestors have been accustomed for centuries to the care of insane persons, contrive to get so much assistance from them in agricultural and domestic work, that they can keep them for a very small sum.

Now if Massachusetts should maintain in its integrity the present close asylum system, and gradually draft off some of the chronic, harmless patients, who still are docile and capable of work, especially women, and board them out in families, at half their cost in the hospitals, she would do what the Board suggested in the last report, and imitate the main features of what is called "the Gheel system." This, however, is only a branch of the Belgium system, the main features of which we have adopted.

From this we think the impression was not only fairly made, but the fact distinctly stated. We give, however, the policy at present adopted by the Board in their own words:

This Board has approved and supported the general features of the Massachusetts system for the care of the insane, believing it grew out of public necessity; and that it has been administered with honest ability.

The system may be briefly stated thus:—

The Commonwealth in its sovereign capacity, has certain duties of guardianship and protection over every adult inhabitant who

lacks the guiding power of reason. Such unfortunates relapse into the condition of helpless dependants, and they must not be left entirely to local authorities, nor even to the tender mercies of relatives. The State may and ought to provide against their being cruelly treated, or inhumanly neglected, and in case of necessity, should interpose the arm of the law in their behalf.

Our State has not provided fully for the performance of this general duty, and therefore the Board has advocated the appointment of a Commissioner of Lunacy, to have general supervision over all these unfortunates, and power to protect them, whether they be in city hospitals, in private hospitals, in county receptacles, in town almshouses, or in private dwellings.

There is, and will be, a constant number of insane wanting costly medical treatment and vigilant care,—some among the State paupers, some among the town paupers, and some among the people who, though not poor, cannot well afford to pay for such treatment and such care. The first only have a legal claim upon the State, which might have discharged its strict duty by providing one hospital for their medical treatment and their comfortable support. But with humane wisdom, three hospitals were provided for the treatment and care of all these classes who apply for reception.

The State leaves it optional with local authorities to provide for their poor insane in almshouses, or in special establishments. Suffolk County has provided a hospital for curative treatment, though all the recent insane of the county might have been treated in the State hospitals at far less than the cost of those treated in the Boston hospital.

In the opinion of the Board the provision made by the State for its insane is sufficient to fully meet the present demand.

The immediate duty of the Board, in its advisory capacity, is with the four State establishments for the insane. It believes that the three hospitals and the receptacle at Tewksbury will suffice for the wants of those whom the State is bound to treat and to support, (to wit, State paupers,) and for those whom she kindly and wisely offers to take at far less cost than they could be provided for elsewhere; to wit, town paupers and indigent citizens.

The Board discourages projects for enlarging the hospitals, or building others, believing that the present ones will suffice, if they

are administered upon the policy of accommodating, *first*, State paupers; *second*, town paupers; *third*, indigent citizens; and refusing to admit boarders from out of the State to the exclusion, or even the inconvenience, of these.

Upon the difficulties attending the proper discharge of the duties of superintendent of an asylum, they make the following judicious remarks:

The post of superintendent of an institution for the insane, exposes its occupant to criticism, to censure, and to scandal, and perhaps more in this country than abroad. He has to take in charge, and to restrain, persons of disturbed faculties and morbid fancies, to whom, of all others, restraint is hateful, and who invoke license in the name of freedom. Moreover, the blood relatives of such persons are apt to be of like temperament.

In a country where all prize individual freedom, the intensification of mental action makes men resist any restraint of expression of their individualism, even though it border on license. There is a marked difference in this respect between American lunatics, as a class, and those of more phlegmatic races, as the Flemish, for instance. The effects of training, too, are apparent, because men carry into lunacy the characteristics which distinguished them when sane. The respect of superiors and the habitual deference which characterize the people in many countries, are rare here; and in their place is an intense individualism, and restiveness under restraint of any kind.

Whoever is instrumental in restraining a certain class of our lunatics is not saved from their ill-will by the consideration that the restraint was for their good. Many who are apparently cured never recover sufficient balance of mind to see this. The imperfectly cured cherish resentment for the restraint put upon them, and consider it a deadly insult, never to be forgiven. It is from this class that the cruel attacks upon the reputation of the superintendents, and the officers of our institutions generally come.

It is the perfectly cured who look back with gratitude to the hospital, and who bless the superintendent, and whose restoration is his best reward.

The tenacity of life in popular bugbears is shown in the credit readily given to stories about our lunatic hospitals being used as bastilles for the imprisonment of sane persons, for wicked purposes.

The Board has given to this matter specific thought and investigation, during many years, and it is convinced that the notion of

our State Lunatic Asylums being used for such wicked purposes is a bugbear used to excite or frighten the public.

The report of the Secretary, Edward Pierce, Esq., is well written, free from ungenerous or unfriendly criticism, and exhibits much careful study and research.

46. *Third Annual Report of the Board of the State Commissioners of Public Charities of the State of New York: 1869.*

The Board has made a report in general highly commendatory of the condition of the various State charities. The deplorable condition of the pauper chronic insane, still retained in the county asylums, is again alluded to; and the question of their future care is still open and demanding solution. They do not, however, make any recommendation upon the subject, promising to give it further consideration in the next annual report. They renew the recommendation of last year, that the private asylums be made subject to their inspection. "This is desired by some of these institutions, and would be useful, not only in securing publicity and inspection, but in assisting us to obtain a complete view of the condition of the insane throughout the State." The necessity of early treatment of the insane has called forth the following remarks, based upon the statistics of the State Asylum at Utica:

The statistics of the asylum show the great importance of early hospital treatment. It should be strongly sounded in the ears of the people of this State that in this, our oldest institution, in which the officers are men of skill and of large experience, the percentage of recoveries in the case of those who are not brought to the institution in the early stages of the disease, is small. Those who are at once subjected to medical treatment are quite likely to recover. When will the people fully accept the proposition that insanity is to be considered as a disease, truly alarming in its form, but still a disease, generally yielding to medical treatment when recent, but taking on a form of obstinate permanence when

chronic? Many hundreds of people are at this moment hopelessly insane because the unreasoning affection of friends overcomes their better judgment, and they are retained at their homes under the care of physicians unskilled in this form of disease, when they should be subjected to the curative treatment of medical experts in hospitals. The time has already arrived for the passage of a law that the pauper insane shall be submitted to early hospital treatment, and the necessary provision should be made for their care. Such a provision seems to us not only eminently humane, but statesmanlike and wise.

47. *Second Annual Report of the Board of Public Charities of North Carolina.* 1871.

This report is made by legislative enactment upon the causes of crime and pauperism. We heartily commend it as in some regards a model one. It is short, only 44 pages. Its bulk is not increased by a large number of statistical tables often valuable to the printer alone. The facts are stated clearly, concisely, and convincingly. The patent causes of crime and pauperism as noted by the Board are intoxicating drinks, want of home training, ignorance, idleness, brothels, gambling hells, pernicious books and pictures, want of economy, extravagance in dress, wild speculations, &c. The report can be widely distributed among the citizens of the State, and from its size will be read by those who receive it. It may do much to enlighten the people and diffuse information upon a subject little thought of or understood by the community at large.

Foreign reports received:

Twentieth Annual Report of the Wilts County Asylum. 1870.
Dr. JOHN THURNAM.

Fifty-Second Annual Report of the County Lunatic Asylum, Stafford. 1870. MARK N. BOWER, Superintendent.

Thirteenth Annual Report of the Pauper Lunatic Asylum of the Cambridgeshire Isle of Ely and Borough of Cambridge. 1870.
Dr. G. MACKENZIE BACON.

Ninth Annual Report of the Cumberland and Westmoreland Lunatic Asylum. 1870. Dr. T. S. CLOUSTON.

Report of the Richmond District Lunatic Asylum, Dublin. 1870. JOSEPH LALOR. M. D., Supt.

Pamphlets received :

Proceedings of the Buffalo Historical Society, with addresses of its Presidents, for 1869 and 1870.

An Act to provide for the Government of the Wisconsin State Hospital for the Insane. 1871.

The Freeman Trial, presenting the testimony given in this remarkable case, with comments. Dr. DAVID DIMON, Auburn, 1871.

Report of the Special Committee of the Medical Society of the District of Columbia, upon the Claims of Homœopaths, &c., for professional recognition in the Medical Service of the U. S. Government, &c.

Annual Report of the Utica Public Schools. ANDREW McMILLAN, A. M., Superintendent.

Address delivered before the Pawcatuck Library Association, (at its Annual Meeting,) Westerly, R. I. By O. H. KILE, A. M.

The Objects and Aims of Medical Science. Anniversary Oration. By FREDERICK D. LENTE, A. M., M. D., &c., &c. [Reprinted from the New York Medical Journal, May, 1871.]

Anæsthetics : E. R. SQUIBB, M. D., Brooklyn, N. Y. 1871.

This pamphlet gives in a concise form the relative advantages of the different anæsthetics, and introduces to the profession an apparatus, devised by the Doctor, for the administration of ether. It is simple in construction, made of material readily accessible to all, inexpensive, and, not being patented, deserves professional consideration.

Transactions of the State Medical Society of Michigan. 1870.

The Buffalo State Asylum for the Insane. By-Laws and Acts authorizing Location, Appointment of Commissioners, Organization, &c. Buffalo, 1871.

Constitution and By-Laws of the Medico-Legal Society of New York: with an Inaugural Address by the President, Dr. STEPHEN ROGERS.

The Physiology and Pathology of Mind in the lower animals: W. LAUDER LINDSAY, M. D., F. R. S. E., Physician to the Murray Royal Institution for the Insane, Perth.

SUMMARY.

THE ACTION OF NEUROTIC MEDICINES IN INSANITY.—The Fothergillian Prize of last year was awarded to Dr. Clouston, Medical Superintendent of the Cumberland and Westmoreland Asylum at Carlisle, for an essay on the "Action of Neurotic Medicines in Insanity." The following are the author's conclusions:

1. Experiments to determine the effect on maniacal excitement of single doses of certain medicines, stimulants, and food. 2d. Experiments to determine the effect on maniacal excitement of prolonged courses of certain neurotic medicines. 3d. An account of clinical observations and experience of the effects of the same medicines in all kinds of insanity.

2. To compare the effect of opium on maniacal excitement, with that of bromide of potassium, with that of cannabis Indica, and with that of a mixture of bromide of potassium and cannabis Indica, and to compare the effect of these with that of a pure stimulant in large quantity, and with that of a nutritive food, eleven maniacal patients were treated with drachm doses of each of the medicines, and with four ounces of whisky, and the beef tea made from a pound of beef on successive days, and the results noted. Each experiment was repeated from fourteen to twenty-nine times.

3. A mixture of one drachm of bromide of potassium with one drachm of the tincture of cannabis Indica is more powerful to allay such excitement than any of the other drugs or stimulants tried. It is more uniform and certain in its effects, more lasting,

interferes less with the appetite; and to produce the same effect the dose does not require to be increased after long-continued use.

4. Single doses of opium tended to raise the temperature and to lower the pulse; single doses of the mixture above mentioned to lower the temperature and quicken and weaken the pulse, of bromide of potassium alone to raise the temperature and lower the pulse, of cannabis Indica alone to raise the temperature and quicken the pulse, of whisky to lower the temperature very much and slightly to quicken the pulse, and of beef tea to lower the temperature in the least degree and to lower and strengthen the pulse.

5. By giving bromide of potassium and cannabis Indica together, not only is the effect of either given separately immensely increased, but the combination has an essentially different action from either of them given alone.

6. Bromide of potassium alone can subdue the most violent maniacal excitement, but only when given in immense and dangerous quantities, and its effects are so cumulative while so given, that after they have once begun to appear they increase for days after the medicine has been stopped, almost paralysing the cerebrum and sympathetic.

7. To produce sleep in mild excitement, one drachm of the bromide of potassium is about equal to half a drachm of laudanum. To allay maniacal excitement, forty-five grains of the bromide and forty-five minims of the tincture cannabis are rather more than equivalent to a drachm of laudanum.

8. Seven cases of chronic mania were treated for twelve weeks with opium, in doses rising gradually from twenty-five minims of the tincture up to ninety minims three times a day, and the results noted. After getting no medicine for several months the same cases were treated with a mixture of bromide of potassium and cannabis Indica in gradually increasing doses, and the results noted and compared with those of the opium treatment.

9. Under the opium treatment the patients all lost weight continuously; their morning temperature was lowered and also their evening temperature, but the latter (which was too high, and its being high was a bad sign) very slightly, and their pulse was decreased in frequency. The opium allayed the excitement in the larger doses, but it soon lost its effect.

10. Under the bromide of potassium and cannabis Indica treatment, the patients only lost in weight very slightly for the

first six weeks, and after that they gained; their weight being more at the end of eight months' treatment than it was to begin with. Their appetites were not interfered with. Their temperature fell, especially their evening temperature, and the pulse was slightly increased in frequency and weakened in force, while the excitement was subdued and the medicine showed no signs of losing its effect, even after being thus used for eight months. The maximum of the good effects and the minimum of the ill effects of a sedative drug were thus obtained by using the bromide of potassium and the cannabis Indica in combination.

11. The bromide of potassium alone may be continued for months in doses of half a drachm three times a day, and the patients gain in weight and remain healthy in body; but the proper dose, whether given alone or along with cannabis Indica, varies greatly in different cases.

12. Cannabis Indica being a diuretic, and the bromide of potassium being carried off by the kidneys, it is probable that the former in that way helps to prevent the cumulative action of the latter when given alone.

13. When the two are given together, the first symptoms developed are those of the cannabis Indica, but these soon merge into a state of drowsy calmness of the nervous system, which is in all respects the opposite of nervous irritability.

14. Fifty-one cases of various forms of insanity were treated by bromide of potassium alone or along with Indian hemp, and the results were that eighty per cent. of these were benefited more or less in some way, and twenty-five per cent. were most decidedly benefited.

15. The milder cases of puerperal and climacteric insanity were sometimes remarkably benefited by drachm doses of the bromide of potassium given at night.

16. In some of the cases of acute mania, the excitement was subdued in a few days by the bromide combined with Indian hemp in doses of from half a drachm to a drachm of each, given three times a day.

17. In some cases of periodic mania and general paralysis, all the worst symptoms of maniacal excitement were allayed, by giving a mixture of bromide of potassium and cannabis Indica, in doses of from half a drachm to a drachm and a half of each, three times a day. This was continued in one case for nine months with the best effect.

18. In three cases of periodic mania, attacks were cut short by a mixture of the two medicines, or by the bromide alone. In one of these complete recovery followed.

19. Fewer cases of simple melancholia were benefited by the bromide alone or along with Indian hemp, than any other form of insanity. Some were made worse by them; but in one case of this disease, where there was great excitement and hallucination of hearing, and suspected organic disease of the brain, the combination gave immediate and complete relief of all the symptoms for four months.

20. One case of senile mania was successfully treated at home by a mixture of the bromide of potassium and tincture of cannabis Indica, when she was to have been sent to an asylum. It seems probable that some such cases, and also patients with short attacks of mania, might be treated by the same medicines at home, when at present they have to be sent to lunatic asylums, on account of the want of such a safe and powerful sedative. [*The Doctor.*]

THE SUBCUTANEOUS INJECTION OF MORPHIA IN MENTAL DISEASES.—We extract from the *London Practitioner* for June, 1871, the following translation from the *Archiv für Psychiatrie, und Nervenkrankheiten*.—Dr. O. J. B. Wolff, in a paper contributed to the *Archiv für Psychiatrie*, has endeavored to lay down precise indications for the subcutaneous injection of morphia in mental diseases, based on the view that this remedy exerts an extraordinary influence on the vaso-motor nerves, which may be estimated by careful examination of the pulse with the sphygmograph. In order to obtain the greatest possible effect from the injection, he makes it near the vaso-motor centre, selecting the anterior and lateral portions of the neck, this part possessing the additional advantage of the connective tissue being very loose, whilst it is in immediate proximity to the sympathetic trunk. He has ascertained by actual experiment that the influence upon the cerebral centre, *i. e.*, upon the mental faculties, is not only rendered most marked by this means, but any peripheric disorder, as neuralgic pain, is removed; whilst if the injection be made at a distance from the brain, though the pain may be abolished, the psychical soothing effects and the removal of cerebral symptoms are much less perfectly accomplished. The immediate effect of the injection is that of an irritant: the vessels contract, the skin becomes pale and cold, the pupils contract, a feeling of malaise and sometimes vomiting supervene, and occasionally bleedings and very transient ptyalism.

The vascular contraction may readily be demonstrated by means of the sphygmograph, and must be still more marked in the smaller vessels, on account of the larger amount of nervous and muscular tissue they contain. Pain is thus abolished just in the same way as it is by cold, electricity and pressure. If the dose of morphia be small, this is the only effect produced; and if the vaso-motor nerves are already in a state of excitation, no perceptible effect even may be perceived. When larger doses have been injected, super- or over-excitation is produced, and paralysis of the vaso-motor nerves results, and as a consequence the pulse, previously very frequent, is rendered much slower. This state of paralysis of the vessels must be attained, if the desired effects are to be produced in cases of mental disease with excitation; if too little be administered, the patient is only rendered more excited. The state of paralysis is accompanied by such phenomena of the brain and spinal cord as dullness, fainting, numbness, inactivity of the senses, and abrogation of common sensation by which the conditions favorable to sleep are established. The vessels being at the same time contracted, and retardation of the current of blood through the brain being produced, this contraction, which is only transient in the case of the larger vessels, is much more persistent in the case of the smaller ones. Coincidentally, indications of paralysis of the spinal cord occur. The limbs refuse to support the patient; the frequency of respiration and the temperature diminish. Dr. Wolff then refers to the occasional ill effects of injections of morphia; one immediate, not dependent upon the quantity injected, and probably due to a nerve having been penetrated; and another, occurring an hour or two after the injection, the frequency of the pulse augmenting, the temperature becoming higher, and the toxic influence of the drug produced. In such cases the patient becomes cyanotic, falls into a deep sleep from which he wakes no more, but breathes for a time, slowly and convulsively; has the head drawn backward, the mouth and eyes half open, the skin cold; exhibits no reflex actions, and has a slower working pulse. In both conditions the chief danger is the arrest of the respiratory process, the blood ceasing to flow through the capillaries, so that none follows an incision through the skin, and the brain and spinal cord becoming paralyzed. The proper treatment under such dangerous circumstances consists in bleeding from the vena jugularis externa, and he remarks that in all cases when morphia has been injected, attention should be paid to the bladder and to the due action of the skin. The indications for treatment are derived from a careful

investigation of the state of the pulse. If a patient has already a slow pulse, and therefore indications of the paralysis of the vaso-motor nerves, results can be obtained with *small* doses which in another patient, with very quick pulse, require very *large* doses. Hence a mere examination of sphygmographic tracings will furnish correct indications of treatment. Hence, too, old people, as a rule, require smaller, younger people larger doses of morphia. Small doses must be prescribed for all degrees of cerebral and cerebro-spinal paralysis, to which the paralysis of the insane is due. In those also who are of middle age and stout, and who, therefore, have more or less fatty hearts, large doses should not be prescribed, or only with very great precaution. When the pulse is slow, about one-sixth or one-eighth of a grain may be injected, but with a quick pulse one-third or one-fourth of a grain to begin with; if these prove insufficient, the doses may gradually rise to one grain or even one and a half grains, but must not in any case exceed this. When the effects of the first dose have been fully produced, the patient is to be watched till the pupils again dilate and the nausea disappears, which usually occurs in the course of twenty-four hours. The vomiting or nausea is often, especially in paralytics, the best means of producing quiescence. The dose should then be repeated on the following day, and then be successively diminished from day to day, for many days or even months together. If the excited condition of the patient diminishes very rapidly, the doses of the morphia may also be rapidly decreased, though they should not be altogether discontinued. The subcutaneous injection of morphia may be applied with advantage in both the curable and the incurable cases; it does not, however, succeed very well in very fat young persons. It is just such in whom chloral hydrate acts capitally. The action of morphia is aided by purgatives and warm baths. (*Archiv für Psychiatrie und Nervenkrankheiten*, Band ii.; and *Centralblatt*, No. 6, 1871.)

EPILEPSY.—From a paper in the *British Medical Journal*, by J. Thompson Dickson, M. D., M. R. C. P., Medical Superintendent of St. Luke's Hospital. We give the following conclusions:

1. The essential condition of epilepsy is a contraction of the cerebral small arterial vessels and capillaries.
2. The occurrence of the contraction is sudden.
3. The duration of the contraction is variable. It may be momentary, or it may continue as long as forty seconds.

4. The cause of contraction is irritation, which may be direct, but is frequently remote, and the result of a variety of causes, all of which, however, tend to exhaustion, which in its turn secondarily brings about an irritable condition of the lesser vessels.

The phenomena corresponding with the conclusions adduced are:

1 and 2. With the contraction of the vessels we have a loss of consciousness, always sudden, though the patient may have some warning of the attack through the medium of the irritation by which the attack is brought about.

3. The duration of the loss of consciousness will vary with the continuance of the capillary and arterial contraction. It may be so instantaneous as to appear only as a momentary vertigo, or even to escape observation altogether; or it may be most profound and of long continuance. There is no rule for determining any difference in the duration of unconsciousness between *le haut mal* and *le petit mal*; while the only essential difference between the two forms of the disorder is the muscular manifestation. In short, the two forms of epilepsy named have been used as extreme illustrations; but they are not by any means natural divisions of the disorder, if it be considered in the light of a class. In fine, epilepsy is loss of consciousness, the result of contraction of the cerebral smaller arteries and capillaries, induced by irritation, either direct, or secondary to exhaustion. Epilepsy may be attended with an endless variety of phenomena, all of which are manifestations of an arrest of control. None of them are essential, and all are dependent upon accidental causes. All are secondary, with the exception of the "aura," which certainly is not primary, and can only be regarded as an imperfect and uncorrected mental impression.

SIMPLE ACUTE MENINGITIS.—[Transactions of the Philadelphia College of Physicians.] Dr. A. Stillé desired to call attention to some points in a case which was recently under his care in the Philadelphia Hospital, and which served to illustrate the general law that simple acute meningitis is never idiopathic. A man affected with chronic tubercular phthisis had been under observation for several weeks, and his pulmonary disease advanced slowly during this period, without presenting any peculiar features, and not even the local complications which are usual in that disease. One day he was suddenly seized with a chill, and, at the same time, with a severe pain in the head. Soon active delirium ensued, with such violence as to render the confinement of the patient necessary. He had fever, a hot head, and an excited expression. These symp-

toms were followed by coma and collapse, and death took place without having been preceded by paralysis of any part. On examination of the body after death, no tubercle, nor any granular condition of the cerebral membranes was found; but the meninges of the convexity of the brain were very much injected, and the pia mater of the same part was filled with pus and lymph. The corresponding cortical substance was also softened.

AN ACT to provide for the safe custody and care of insane criminals, and repealing certain provisions of law relating to the expiration of sentences.

Passed May 17, 1869; three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. When a person accused of the crime of arson or murder, or attempt at murder, shall have escaped indictment, or shall have been acquitted upon trial on the ground of insanity, the court, being certified by the jury or otherwise of the fact, shall carefully inquire and ascertain whether the insanity in any degree continues, and if it does, shall order such person into safe custody, and to be sent to one of the State lunatic asylums or to the State lunatic asylum for insane criminals, at Auburn, at the discretion of the court. If any person in confinement under indictment for the crime of arson or murder, or attempt at murder, shall appear to be insane, the county judge of the county where he is confined shall institute a careful investigation, call two or more respectable physicians and other credible witnesses, invite the district attorney to aid in the examination, and if it be deemed necessary, shall call a jury, and for that purpose is fully empowered to compel the attendance of witnesses and jurors; and if it is satisfactorily proved that such person is insane, said judge may discharge such person from imprisonment, and order his safe custody and removal to one of the State lunatic asylums or to the State lunatic asylum for insane convicts, at the discretion of such judge, where such person shall remain until restored to his right mind; and then, if the said judge shall have so directed, the superintendent of said asylum shall inform the said judge and the district attorney of the county thereof, so that the person so confined may, within sixty days thereafter, be remanded to prison, and criminal proceedings be resumed, or otherwise discharged. If any such person be sent to either of said asylums, the county from which he is sent shall de-

fray all the expenses of such person while at the asylum, and the expense of returning him to such county; but the county may recover the amount so paid from his own estate, if he have any, or from any relative, town, city or county that would have been bound by existing laws to provide for and maintain him elsewhere.

§ 2. Any person now or hereafter confined in either of the State lunatic asylums upon the charge of arson or murder, or attempt at murder, under the provision of sections thirty-one or thirty-two of chapter one hundred and thirty-five, of the laws of eighteen hundred and forty-two, or under the preceding section of this act, may, upon the application of any superintendent of an asylum, be brought before a justice of the supreme court, who may order his removal to the State lunatic asylum for insane criminals, at Auburn. The provision of the preceding section requiring the county to defray the expenses of a person sent to either asylum shall be equally applicable to similar expenses arising under this section.

§ 3. Section one of chapter one hundred and thirty of the laws of eighteen hundred and fifty-five is hereby amended to read as follows:

§ 1. The building erected on the prison grounds at Auburn, for an asylum, shall be known and designated as the State Lunatic Asylum for insane criminals, at Auburn.

§ 4. Section six, chapter one hundred and seventy-one, laws of eighteen hundred and thirty-six, providing that certain sentences to imprisonment in the State prison shall expire between March and November, is hereby repealed.

§ 5. This act shall take effect immediately.

AN ACT to authorize judicial inquiry as to the sanity of persons indicted for capital offences.

Passed April 21, 1871; three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. The court of oyer and terminer, in which any indictment may be pending against any person for any offence the punishment of which is death, shall have power, with the concurrence of the presiding judge of such court, summarily to inquire into the sanity of such person, and the degree of mental capacity possessed by him, and for that purpose may appoint a commission

to examine such person and inquire into the facts of his case, and report thereon to the court; and if the said court shall find such person insane or not of sufficient mental capacity to undertake his defence, they may by order remand such person to such lunatic or other asylum as, in their judgment, shall be meet, subject as to the future disposition of the person to all the provisions of chapter twenty, part first, article second, title third of the Revised Statutes.

§ 2. The governor shall possess the same powers conferred upon courts of oyer and terminer in the case of persons confined under conviction for offences for which the punishment is death.

§ 3. This act shall take effect immediately.

STATE INEBRIATE ASYLUM—MEETING OF TRUSTEES AND ELECTION OF OFFICERS.—The Trustees of this institution appointed by Gov. Hoffman in pursuance of a law passed by the Legislature last winter, held their first meeting June 9, 1871, and the following officers were elected :

President—Dr. Willard Parker.

First Vice-President—Dr. Wm. C. Wey.

Second Vice-President—Dr. George Burr.

Treasurer—Abel Bennett.

Registrar—Samuel W. Bush.

Superintendent—Dr. D. G. Dodge.

Committee of Finance—W. W. Gordon, P. S. Danforth, W. H. Bristol, Abel Bennett, Ausburn Birdsall.

Committee of Management and Discipline—J. G. Orton, W. C. Wey, G. A. Dayton, George Burr, P. G. Ellsworth.

Executive Committee—W. H. Bristol, W. W. Gordon, J. G. Orton, P. Munday, J. Conkling.

The Institution is now completely under State management.

—The paper on "Insanity in Relation to Law," published in this number, is one of those read at the late meeting of Superintendents of Hospitals for the Insane at Toronto. It became the subject of a discussion which, with other discussions and proceedings of that

Convention, we expect to print in our next number. Until then we reserve all remarks that it may be proper for us to make on any particular paper or on the proceedings.